

May 12, 1870.

Professor Newton, V.P., in the Chair.

The Secretary read notices of the more important additions to the Society's Menagerie during the month of April, and called particular attention to:—

1. A female Rusine Deer, purchased April 13th, and stated to have been received from the Philippines.

The Rusine form of Deer of the Philippines was still very imperfectly known. The present animal was of small size, about equalling that of the Hog-deer (*C. porcinus*), but more slender in form. It was very dark in colour, being of a nearly uniform dark brown; the ears short and rather rounded, apparently naked on the outside. Round the eye was a pale mark; the tail beneath and insides of thighs were white; and the white metatarsal gland-patches were very prominent.

This Deer had been for the present designated *Cervus marianus*—the Deer of the Marianne Islands (upon which this term had been founded by Desmarest), having been stated to have been introduced into those islands from the Philippines*.

2. A Jackal, purchased April 1st, and stated to have been brought from the River Fernand Vas, south of the Gaboon, and to be the animal referred to in Du Chaillu's 'Explorations and Adventures in Equatorial Africa' (p. 243) in the following passage:—

"Before we got to town again I shot a *Mboy*, a very shy animal of the Wolf kind, with long yellowish hair and straight ears. I have often watched these beasts surrounding and chasing small game for themselves. The drove runs very well together; and as their policy is to run round and round, they soon bewilder, tire out, and capture any animal of moderate endurance."

Mr. Sclater stated that he had in vain endeavoured to find a name for this very distinctly marked species of the genus *Canis*. There did not appear to be any specimen at all resembling it in the British Museum. It was not possible to describe it accurately from the living individual; but the animal appeared to be at once distinguishable from every described species of the genus by the black and white stripe extending along the flanks, and the very long black tail with a distinct white termination. Mr. Sclater proposed as a temporary designation for this species the name of the Side-striped Jackal (*Canis lateralis*), and exhibited a drawing by M. Keulemans (Plate XXIII.) representing it. Its general size and appearance was that of the Black-backed Jackal (*Canis mesomelas*), from which, however, it was readily recognizable by its sharper and more pointed snout, the distinct side-stripes, and the long, white-tipped tail†.

* See Quoy et Gaim. Zool. Voy. Uranie, p. 33.

† Since this notice was written I have received a letter from Dr. Peters (to whom I had sent a copy of the number of the 'Illustrated London News' of April 30th, containing a figure of this animal, p. 465), suggesting that the species

3. A Sooty Crow-shrike (*Strepera fuliginosa*, Gould) from Australia, purchased April 13th; believed not to have been previously exhibited, and making the third species of this peculiar Australian genus now living in the Society's Gardens. The other two species represented were the Grey Crow-shrike (*Strepera anaphonensis*) and the Pied Crow-shrike (*Strepera graculina*).

4. An Angulated Tortoise (*Testudo angulata*) from South Africa, believed to be the first individual of this rare species obtained alive by the Society.

5. A Vulturine Guinea-fowl (*Numida vulturina*) from Brava, on the Somali coast of Eastern Africa, presented to the Society by Dr. John Kirk, C.M.Z.S. Dr. Kirk had despatched from Zanzibar in a steamer to Marseilles, *via* the Suez Canal, a single female of this fine Guinea-fowl, along with a small collection of other animals, the remainder of which were expected to arrive in a few days. Living specimens of this Guinea-fowl had already reached the Zoological Gardens of Hamburg; but this was the first individual that had been brought alive to England. The Council had taken steps to endeavour to obtain, through Dr. Kirk's kind agency, a further supply of specimens of this bird, which, if successfully acclimatized, would prove a great ornament to our poultry-yards.

The following papers were read:—

1. Notes on some Points in the Anatomy of three Kingfishers (*Ceryle stellata*, *Dacelo gigas*, and *Alcedo ispida*). By ROBERT O. CUNNINGHAM, M.D., F.L.S., C.M.Z.S.

(Plate XXIV.)

In the course of three seasons spent in the Strait of Magellan and the channels on the west coast of Patagonia, I had several op-

may be *Canis adustus* of Sundevall, described 'Kongl. Vet. Ak. Förh.' 1846, p. 121, as follows:—

"*Canis adustus*, n. *griseus, variegatus, pilis dorsi crassis, ante apicem nigrum late albis (curvalis); cauda nigricante, apice alba, pilis teram attingentibus; auriculis extus fuscis. Affinis C. mesomela et praesertim C. antho, Cizm. Sat gracilis, capite angustato, elongato (fere ut in C. familiari grajo), linea faciali recta. Dentes, ut in C. variegato et affinibus, sat vulpini; tubere alto, interno in d. ferino superiore. Pili dorsi et laterum fere ut in C. variegato colorati sed in adultis, quos habemus, parte alba sat crassa, curvata, apiculo nigro hic illic amisso, indeque speciem pilorum igne adustorum praebentes. Cauda basi pallida, dein vero pilis pallidis, apice longe nigris. Apex caudae pilis totis albis. Pulluli habent pilos corporis tenues, simplices, minus albos, caudam vero ut in adultis coloratam. Adultus 785 mm. + cauda 330 (c. pilis 430); planta c. u. 170. Altitudo dorsi 450, caput 185. Habitat in Caffraria inferiore."*

This animal was also met with by Dr. Peters in Mozambique (Reise n. Moz. Mamm. p. 25), and by Dr. Welwitsch in Angola (cf. P. Z. S. 1865, p. 400); but in neither case were perfect specimens obtained.

Dr. Peters (who is much better acquainted with African Mammals than I am) is very probably right in his identification; but it may be remarked that Sundevall says nothing about the lateral stripes, which are very noticeable and very peculiar in this Jackal.—P. L. S.

Fig 2

Fig. 1.

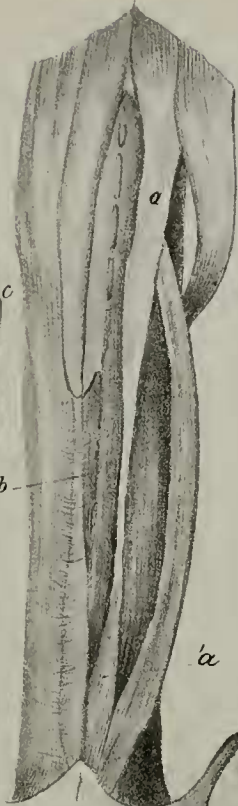


Fig. 3.



Fig. 4.

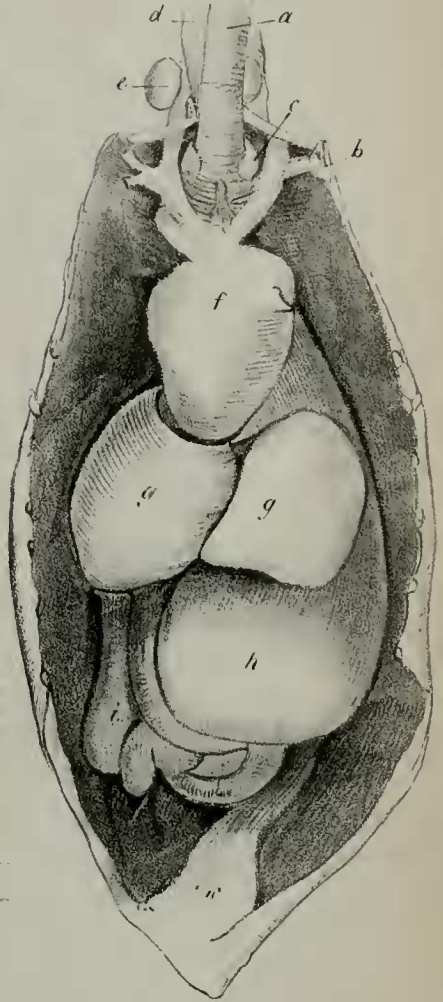


Fig. 7.

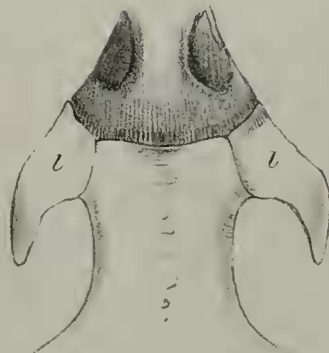


Fig. 8



Fig. 5.



Fig. 6.



portunities of examining specimens of *Ceryle stellata*, which is not uncommon in these dreary regions, and may frequently be observed perched on the branch of a tree overhanging the water, keeping a vigilant look-out for its finny prey. It occasionally utters a harsh stridulant note, and appears to be a bird of a bold disposition, an individual on more than one occasion having alighted on the lower rigging of the ship and remained there composedly for some time.

While skinning a specimen shot at Port Otway in the Gulf of Peñas, in the month of April 1868, my attention was arrested by what appeared to me a peculiarity in one of the superficial muscles of the back of the neck, *i. e.* the *biventer cervicis*. This muscle, which I have had an opportunity of examining in a variety of birds of different orders, generally differentiates itself from the other spinal muscles at the lower portion of the cervical region, and, extending throughout the entire extent of the neck, is inserted into a prominent ridge on the occiput. As a rule it consists of an upper and lower muscular portion or belly separated by an intermediate strong tendon of varying extent. The greatest part of this tendon, as well as the lower muscular portion, is finely bound down along the back of the spine by a strong aponeurotic sheath, which, however, permits of a free gliding motion within it. Of the two muscular portions, the lower, according to Meckel, who has described some of the principal modifications of this muscle in the third volume of his 'System der vergleichenden Anatomie,' is much the larger; but this is not the case in the Kingfishers, according to my observations. On carefully dissecting the muscles in several specimens of *Ceryle stellata*, I found that the corresponding muscles of opposite sides were united at the junction of the tendon with the upper muscular portion by a narrow but strong transverse tendon (see Plate XXIV. fig. 1), and that, in addition to this, a strong membrano-tendinous junction was likewise present between them at their insertion into the occiput. As I had never observed this connexion between the opposite muscles in any of the other birds examined by me, I was anxious to procure specimens of some other species of Kingfishers in order to ascertain whether the like peculiarity obtained in them also; and this I have been enabled to do through the kindness of my friend Mr. Sharpe, who has furnished me with specimens of our common Kingfisher (*Alcedo ispida*) and the Laughing Jackass of Australia (*Dacelo gigas*). On dissecting an example of the former of these birds (shot in the beginning of February of this year), I found that a considerable space, filled with fat, intervened between the *biventer* of each side, and that there was no trace of a tendinous union between them (see Plate XXIV. fig. 3); further that the aponeurotic sheath binding down the lower portion of the muscle to the spine was very feebly developed. In the latter bird (Plate XXIV. fig. 2) the muscles lay closer together, and there was a very strong aponeurotic sheath, but no tendinous connexion. It is therefore not improbable that this may be either a generic or specific peculiarity; how arising, or for what purpose provided, I am not prepared to say.

I may add a few remarks on some other points in the anatomy of the three birds. The tongue of *Ceryle stellata* and that of *Alcedo ispida* bear a close general resemblance to each other and differ widely in form from that of *Dacelo gigas*. In the first two (figs. 1 & 2) it is broad, thin, flat, and sharply acuminate at the tip, while in *Dacelo* (fig. 3) it is much thicker proportionally and of a sagittate form.

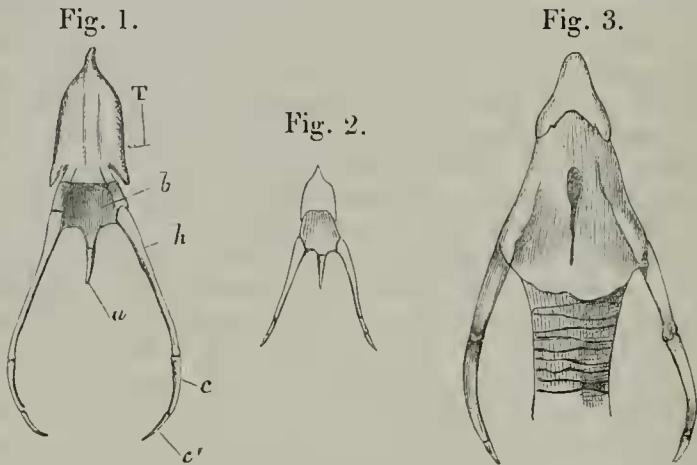


Fig. 1. Tongue of *Ceryle stellata*: *b*, basihyal; *u*, urohyal; *h*, hypohyal; *c*, cerato-hyal; *c'*, cartilaginous piece.

2. Tongue of *Alcedo ispida*.

3. Tongue of *Dacelo gigas*.

The bronchial tubes in *Alcedo ispida* are considerably longer proportionally than those of *Dacelo gigas*. In the latter bird a well-marked subtriangular pale yellowish-red gland exists at the external side of the origin of each bronchus; and traces of a similar structure exist in the former. The length of the œsophagus in *Dacelo gigas* is $5\frac{1}{2}$ inches, and that of the intestinal canal 27 inches. There are no cæca. The diameter of the first portion of the intestine, which was distended with food, greatly exceeded that of the succeeding portions in the specimen examined. The dimensions of the digestive tube in *Alcedo* I could not accurately ascertain, as the viscera were considerably injured; but Macgillivray, who has figured the digestive organs of this species not very satisfactorily (the form of the tongue being incorrectly given, and the stomach represented as much more muscular than it is in reality), states the length of the œsophagus as 3 inches, and that of the intestine as $10\frac{1}{2}$ inches. The liver was larger in proportion and more elongated in form in the specimen of *Alcedo* than in that of *Dacelo*. The specimen of *Dacelo* examined was a female which had died in the beginning of February; and the left ovary was of a narrow oblong form, its length being $3\frac{1}{2}$ lines, and its breadth $1\frac{1}{2}$ line. The oil-glands of *Dacelo* and *Alcedo* differ considerably: in the latter the gland is deeply divided into two lobes, while in the former the anterior margin is only slightly exca-

vated. As I have not made an examination of the osteology of these birds, I will merely point out that there is a remarkable osteological difference in the orbit of *Dacelo* from that of *Alcedo* and *Ceryle*, which is at once apparent on removing the skin from the crown of the head, the lachrymal bone in the former bird attaining the development so characteristic of the Falconidæ and Strigidæ, in which it contributes to roof-in the eye.

DESCRIPTION OF PLATE XXIV.

- Fig. 1. Muscles of back of neck of *Ceryle stellata*: *a*, *a'*, upper and lower bellies of *biventer cervicis* (aponeurotic sheath removed on each side); *, transverse tendon; *b*, longus colli posticus; *c*, complexus.
2. Muscles of back of neck of *Dacelo gigas*: *a*, *a'*, upper and lower bellies of *biventer cervicis*; *b*, aponeurotic sheath retained on left side; *c*, trapezius; *d*, latissimus dorsi.
3. Muscles at back of neck of *Alcedo ispida*: *a*, *a'*, upper and lower bellies of *biventer cervicis* (aponeurotic sheath removed).
4. Viscera of *Dacelo*: *a*, trachea; *b*, bronchus; *c*, gland; *d*, œsophagus; *e*, lymphatic gland; *f*, heart; *g*, liver; *h*, stomach; *i*, convolutions of intestine; *k*, cloaca.
5. Oil-gland of *Dacelo gigas*.
6. Oil-gland of *Alcedo ispida*.
7. Orbit of *Dacelo*: *l*, lachrymal.
8. Orbit of *Alcedo*: *l*, lachrymal.

2. On the Taxonomic Characters afforded by the Muscular Sheath of the Œsophagus as regards Sauropsida and other Vertebrata. By GEORGE GULLIVER, F.R.S.

This paper is intended to show that the subject of it deserves more attention than it has yet received; to which end some of the results of my observations will be briefly noticed, referring for more particulars to my descriptions in the 'Proceedings of the Zoological Society' for September 10, 1839, June 14, 1842, and April 22, 1869. And if, by now again calling attention to the question, it should receive such additional investigations as may lead to a more accurate and extensive knowledge of the taxonomic value of the œsophageal sheath, the object of the present communication will be attained.

Although more than a quarter of a century has passed since the observations above cited proved that either the comparative distribution, or presence, or absence, of the transversely striped muscular fibre of the œsophagus may afford good diagnostics between certain large groups and subsections of Vertebrates, and Leydig has confirmed my results as to the deficiency of this fibre in the œsophageal sheath of Sauropsida, these facts have not yet been entertained in the books of systematic zoology and comparative anatomy.

This neglect may have been caused by the complete investigation of the subject being somewhat tedious, requiring extensive examinations with good instruments, and relating to morphological arrange-

ments of which neither the significance nor the importance is very obvious. Besides, in the current 'Anatomy of Vertebrates,' the descriptions in this department are either so perfunctory or dogmatically incorrect as to repel research. Thus we have no notice whatever of the kind of muscular fibre composing the œsophageal sheath of any vertebrates, except when, in a comparison of this sheath of certain birds with that of ruminant mammalia (ii. p. 158, iii. p. 470), there occurs the singular notice that in this order the muscular fibres of the œsophageal coat "are of the striated kind." Hence the false doctrine might arise that the intimate structure of this muscular sheath is generally insignificant throughout the vertebrate subkingdom, and that the sheath of striated muscular fibre of the œsophagus in Mammalia is confined particularly to the order Ruminantia; whereas the œsophageal sheath of striped muscle is by no means confined in Mammalia to the Ruminants; for it exists more or less throughout the class, as well as in Fishes. Besides the Ruminants, several different orders or families of Mammalia have a sheath of this striated fibre extending all along the œsophagus to or even on the cardia, as may be well seen, for example, in Rodents, Bears, and many others; while this kind of muscle in Man, Quadrumana, Felidæ, the Horse, and several more Mammalia stops on the œsophagus much short of its cardiac end. The comparison of the muscular coat of the œsophagus of Owls, and other Raptorial Birds that regurgitate their food in "castings," with the corresponding sheath in Ruminants is erroneous; for this sheath is deficient in the striated muscular fibre in Owls and other birds, while striated muscle composes the chief portion of the coat of the œsophagus of Ruminants.

Though numberless observations may be required to obtain and methodize all the facts, very easy and simple examinations will suffice for single diagnoses; just as, by an inspection of one part, we can arrive at the whole character of a plant or animal which had originally been determined by far more extensive researches. Constant differences in morphological arrangements are not the less important because we happen to be ignorant of their meaning. To define the exact value in taxonomy of the muscular sheath of the œsophagus requires far more extensive researches than I have been able to complete; but my observations show that it certainly affords valuable characters.

Comparative anatomists have long since perceived many resemblances between birds and reptiles; and of late Professor Huxley (Proc. Zool. Soc. 1867, p. 415 *et seq.*) has so more particularly determined the characters common to these two classes as to form them into his one great group of "Sauropsida." Accordingly he describes more exactly and comprehensively than had been previously done those points in which the two classes, constituting that one primary group, agree together and differ from Mammalia. But both he and his predecessors have neglected the œsophageal sheath, although it appears probable, from the observation cited above, that this presents good characteristics.

In short, in those observations the transversely striated muscular

fibre was not found to compose the sheath of the œsophagus of either Birds or Reptiles, while a coat of this fibre was always seen to invest more or less of the œsophagus of Mammalia and Fishes. Here, then, is a remarkable character in which Birds and Reptiles agree together and differ from Mammals and Fishes.

Nor is it less noteworthy that while Sauropsida are thus distinguished by the absence of striated muscular fibre on the œsophagus, they are, on the other hand, equally distinguished by the presence of this fibre within the eye. At least I have never found striated muscular fibres in the eye of any mammal or fish, nor have I ever failed to find those fibres in the eyes of Sauropsida; and this agrees with the older observations of other anatomists. But further researches are yet required on this subject.

So, too, of the œsophageal sheath, both in the larval and perfect states, of Batrachia. As of *Lepidosiren*, a reputed fish, the blood-disks, according to my observations (Ann. Nat. Hist. October 1848, and Proc. Zool. Soc. 1862, fig. 17, p. 101), have a Batrachian character, it would be interesting and instructive to compare the œsophageal sheath of this creature with the same part of other allied vertebrates. In my note-book occurs the following account:—"Dec. 14, 1848. *Lepidosiren* from the West Coast of Africa: œsophagus membranous, wide and very dilatable, many striated muscular fibres mixed with smooth ones on the gullet backwards, as far as the hind end of the pericardium; the œsophagus a third of an inch further back, and thence to the stomach, quite destitute of any thing like striated muscular fibre." This examination is at present worthless, from a want of the comparisons above mentioned, but may prove valuable whenever they are made.

As already noticed, I have never found the whole œsophagus of Fishes and Mammalia destitute of a sheath of striated muscular fibre; and in certain sections of the class Mammalia the extent of that sheath is so different as to afford, so far as my observations have gone, good diagnostics. Thus in the Rodentia and Ruminantia this striated fibre does, and in Man and Quadrumana does not, invest the cardiac end of the œsophagus. And in different sections of one and the same order there may be similar differences; of the Carnivora, *e. g.*, the striated muscular fibre does not clothe the cardiac extremity of the œsophagus in the Felidæ, but extends quite to that termination in the Ursidæ.

That such differences are always invariable cannot, in the present state of our knowledge, be peremptorily affirmed; but that they are constant in many vertebrates is certain. How far such characters may tend to favour the validity of the great group of Sauropsida, or of only the two primary vertebrate sections of Pyrenæmata and Apyrenæmata (Proc. Zool. Soc. 1862, p. 91, and Journ. Anat. and Phys. v. 2), remains to be seen by the light of more knowledge.

Finally, when all the diagnostics between Sauropsida and Mammalia are well and truly reviewed, it now appears that the characters furnished by the intimate structure of the muscular fibre must receive more attention than has hitherto been given to them.

3. On the *Hirundinidæ* of the Ethiopian Region.

By R. B. SHARPE, F.L.S., Libr. Z.S., &c.

I propose in the present paper to give an outline of the African Swallows; and as I possess a very good series of specimens in my private collection, I am induced to hope that these notes may be of some service to the future student of these difficult birds. So slight is at present our knowledge of the different species of Swallows that I cannot expect the present attempt to be by any means perfect, especially as there still remain some few species, of which I have been unable to examine specimens. Nevertheless I venture to hope that the labour bestowed upon it will in some small measure conduce to the benefit of ornithological science, and that it may prove the groundwork on which some more experienced writer may build a surer structure. I have endeavoured to work out the subject in the manner which Messrs. Selater and Salvin have pursued in their well-known "Synopsis of the American Rallidæ" *. A more useful contribution to ornithology has, in my opinion, never been published; and were every essay to be prepared in the same accurate and careful manner, the student would have little difficulty in the determination of those species at present so puzzling.

It is by no means an easy task to define clearly tangible characters by which the various genera of the *Hirundinidæ* may at once be distinguished. The most efficient treatment of their classification that I have met with is the arrangement proposed by Professor Baird in his 'Review of American Birds;' but from his having chiefly American Swallows to deal with, his conclusions are not always satisfactory when such genera as are strongly represented in the Old World have to be considered. I shall, however, more than once have to express my indebtedness to his painstaking exposition of the family *Hirundinidæ*, throughout the course of the present paper.

It is very curious to note the close affinity of some of the forms found in the African continent with those found in the Neartic, and more especially the Neotropical, region. As a rule the affinities of Africa are closer to South America; but with the Swallows the opposite is the case, and the balance of relationship is in favour of North America, especially in the instance where a South-African species, *Petrochelidon spilodera*, is so closely allied to the North-American *P. lunifrons*, as at first to have been mistaken for it. As in the New World, so in Africa a group of rough-winged Swallows is found; and so different in form are these from all the other *Hirundinidæ* that it is proposed to separate them as a separate subfamily, *Psali-doprocninæ*, to include the African genus *Psali-doprocne* and the American genus *Stelgidopteryx*.

Hitherto all authors on African ornithology have included among the *Hirundinidæ* one or more species of *Atticora*; but this genus, I

* P. Z. S. 1868, p. 442.

firmly believe, is not represented in the Ethiopian Region. It must be remembered that the type of the genus *Atticora* is the *Hirundo fasciata* of Gmelin, a Brazilian species, remarkable for its small round nostrils, which are devoid of any overhanging membrane. Professor Baird states that the only two specimens of *A. fasciata* examined by him had only ten tail-feathers: but this must have been accidental; for I examined the large series recently brought home by Mr. Edward Bartlett from the Peruvian Amazons, and every bird had its full complement of twelve tail-feathers. Admitting that *Petrochelidon*, which is represented in Africa, is a distinct genus from *Atticora*, which I consider to have been satisfactorily proved by Professor Baird, I submit that a species of true *Atticora* has yet to be discovered in Africa, until which time the genus must be banished from the catalogue of its avifauna.

In the consideration of the rest of the family I follow Professor Baird in deeming the nostrils to be the chief distinguishing characteristic, and particular attention must be paid to the presence or absence of an overhanging membrane on the upper edge of the nostril. In the true Swallows and Martins it is always present, while in the *Atticora* group it is not developed. The genera and subgenera included by Professor Baird in this latter group are *Progne*, *Phæoprogne*, *Petrochelidon*, *Atticora*, *Notiochelidon*, *Neochelidon*, *Pygochelidon*, and *Stelgidopteryx*, of which number, however, the learned Professor only admits *Petrochelidon*, *Atticora*, and *Stelgidopteryx* as worthy of generic rank. As before mentioned, it is my intention to separate the latter genus along with *Psalioprogne* as a distinct subfamily. It is, however, more with Professor Baird's second group of Swallows, in which he includes the genera and subgenera *Hirundo*, *Tachycineta*, *Cotyle*, and *Callichelidon*, that we have to deal in the present paper, inasmuch as, *Tachycineta* and *Callichelidon* being admitted to be only subgenera, we have left *Hirundo* and *Cotyle*, both of which are strongly represented in the Ethiopian Region. I think, however, Professor Baird has laid too much stress on the small tuft of feathers on the inner base of the tarsus as a generic character of *Cotyle*; for in our common Sand-Martin (*Cotyle riparia*), the only American species of the genus, this is indeed very strongly developed, but in every other species of the genus that I have seen it is absolutely wanting, and should therefore be taken as of specific rather than of generic importance. The genus *Chelidon* is easy to distinguish, by reason of the densely feathered tarsi. *Waldenia* has been lately proposed by me for the reception of the *Hirundo nigrita* of Gray. My friend Dr. O. Finsch thinks that this bird is only subgenerically separable from *Progne*; but although in many respects there is a resemblance, yet in the bareness of the upper joint of the tarsus in *Waldenia* is very different from *Progne*, which has it densely feathered, and this character alone is of strong generic importance. I have in conclusion to thank the many kind friends who have lent me specimens or otherwise assisted me in the preparation of the present paper.

Treating the subject in precisely the same manner as Messrs.

Sclater and Salvin in their excellent paper before referred to, I first divide the *Hirundinidæ* into two subfamilies, as follows :—

- a. primarii primi pogonio externo valde serrato..... *Psolidoprocniæ*.
 b. primarii primi pogonio externo lævi *Hirundinæ*.

These two subfamilies appear to contain 38 African species, belonging to 7 genera, viz. :—

- Psolidoprocniæ*..... 1 genus: 4 species.
Hirundinæ 6 genera: 34 species.

Subfam. I. PSALIDOPROCNIÆ.

Genus 1. PSALIDOPROCNE.

Type.

- Psolidoprocne*, Cab. Mus. H. Th. i. p. 48 (1850). *P. holomelæna*.
Pristoptera, Bon. Riv. Contemp. Tor. 1857, p. 4. *P. pristoptera*.

Clavis specierum.

- a. pileo nigro.
 a'. cauda furcata.
 a''. subalaribus nigris..... 1. *holomelæna*.
 b''. subalaribus albis 2. *pristoptera*.
 b'. cauda integra..... 3. *nitens*.
 b. pileo albo..... 4. *albiceps*.

1. PSALIDOPROCNE HOLOMELÆNA.

Hirundo holomelas, Sundev. Æfv. Vet. Ak. Förh. Stockh. 1850, p. 108 (descr. orig.); Hartl. Journ. f. Orn. 1855, p. 360; Grill, Zool. Anteckn. p. 36 (1858); Layard, Ibis, 1864, p. 134; Gray, Hand-l. of B. i. p. 70 (1869).

Atticora holomelas, Cass. Cat. Hirund. Phil. Acad. p. 6 (1852); Hartl. Orn. Westafr. p. 25 (1857); Layard, B. of South Afr. p. 57 (1867).

Psolidoprocne holomela, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Psolidoprocne holomelæna, Sclater, P. Z. S. 1864, p. 108.

Atticora hamigera, Cass. Proc. Phil. Acad. 1850, p. 57, pl. 12 (descr. orig.).

Psolidoprocne cypselina, Cab. Mus. Hein. Th. i. p. 48 (1850, descr. orig.); Müll. Journ. f. Orn. 1855, p. 4.

Atticora obscura, Temm. MS. in Mus. Ludg., undè

Atticora obscura, Hartl. Journ. f. Orn. 1855, p. 35 (descr. orig.); id. Orn. Westafr. p. 26 (1857); id. Journ. f. Orn. 1861, p. 103.

Hirundo obscura, Hartl. Journ. f. Orn. 1855, p. 360; Gray, Hand-l. of B. i. p. 71 (1869).

Male. Above dark greenish black, deepest in the centre of the back and on the breast; quills deep black with a slight greenish lustre, the outer web of the first primary distinctly serrated; tail dark greenish black, long, and deeply forked; bill black; feet brown. Total length 5·4 inches, of wing 4·1, tail 3, tarsus 0·3, middle toe 0·3, lateral toes 0·2.

Female. Similar to the male, but smaller and somewhat more

dark, the outer edge of the external primary not serrated*, and the tail less forked.

Hab. Cape Colony (*Layard, Surtees*); Swellendam (*Cairncross*); Knysna (*Andersson*); Natal (*Ayres*); Gold Coast, Saccondé (*Pel, Mus. Lugd.*); Ashantee (*Mus. Brit.*).

As the typical specimens of the present species came from Natal, I have thought it best to describe a bird from that locality; and I have therefore taken my description from a fine male, collected by Mr. Ayres in Natal, and kindly lent to me by the Rev. H. B. Tristram. There are also specimens from Natal in the British Museum, and Mr. Gray is inclined to keep them distinct from the Cape-Colony specimens; but I cannot agree to separate them, as the only difference is the slightly brighter plumage of the Natal bird. This I take to be a seasonal distinction; for the adult specimen from the Gold Coast in the Leyden Museum is equally brightly glossed.

Although this Swallow is apparently a migrant, the exact range of its migration is not yet quite satisfactorily defined. Mr. Cairncross, who has contributed some interesting notes to Mr. Layard's 'Birds of South Africa,' states in that work that, although met with in the neighbourhood of Swellendam, it does not appear to breed there. Mr. Layard himself observed the bird in the Knysna district "apparently breeding in holes in the banks, but he was unable to investigate its doings more closely." Specimens of *Psolidoprocne obscura* (Temm.), which species is nothing but the young of the present species, are in the British and Leyden Museums. I have examined the type of Temminck's *Atticora obscura* in the latter collection, and am satisfied about this identification. The original specimen was collected by Pel along with fully adult birds of *Ps. holomelæna* on the Gold Coast. I may mention that Mr. G. R. Gray also agrees with me in considering the *Atticora obscura* of Hartlaub to be only the young of *Psolidoprocne holomelæna*; nor will this conclusion, I believe, be called in question by any one who examines the birds in the British Museum.

I subjoin the measurements of the West-African specimens above mentioned, in juxtaposition with a large series in my own collection from Southern Africa.

No.	Sex.	Locality.	Authority.	Long. tot.	Al.	Caud.	Remarks.
1.		Rio Boutrý..	Pel	5.0	3.6		} Types of <i>Ps. obscura</i> (Temm.).
2.	♂	Saccondé ..	"	6.4	3.7		
3.		Elmina	Nagtlas	4.0	3.5		
4.	♂	Caffraria....	Wahlberg ..	5.8	4.1		
5.		Ashantee....	Mus. Brit. ..	4.4	3.4	2.3	
6.	♂	Natal	Ayres	5.4	4.1	3.0	
7.	♂	S. Africa....	Layard	6.0	4.3	3.25	
8.	♂	"	"	6.1	4.3	3.3	
9.	♂	"	Surtees	6.3	4.4	3.6	
10.	♂	Knysna	Andersson ..	5.8	4.35	3.6	
11.	♂	"	"	5.8	4.3	3.3	
12.	♂	"	"	5.5	4.35	3.25	
13.	♀	"	"	5.3	3.8	2.7	
14.	♀	"	"	5.1	4.0	2.4	
15.	♀	"	"	5.5	3.8	2.6	

* In the genus *Stelgidopteryx* also the female differs from the male in not having the outer primary serrated.

Specimens 1 to 4 are in the Leyden Museum; and I am glad to see that no. 3, which has been more recently received than Temminck's types, has been labelled by Professor Schlegel *H. holomelæna*. This shows that he holds the same opinion as myself; for if *Psalidoprocne obscura* were a distinct species from *Ps. holomelæna*, the bird sent by Governor Nagtlas from Elmina would belong to the former species, as it is absolutely identical in coloration with the type—that is to say, is more dusky underneath than ordinary adult *Ps. holomelæna*.

Colonel Grant, in his 'Walk across Africa' (p. 127), speaks of a Swallow having been observed, *all black* in colour, which Drs. Finsch and Hartlaub, in their new work on East-African Ornithology, suggest may possibly have been *Ps. obscura*. Dr. Th. von Heuglin, in his 'Ornithologie Nord-Ost Afrika's' (p. 148), goes further and includes it (with a query) as a species occurring within his limits, but on no other authority than the quotation from Colonel Grant's work. I cannot see that there is any good reason for supposing that this was the bird observed; and it is just as likely to have been a sex of *Ps. albiceps*.

2. PSALIDOPROCNE PRISTOPTERA.

Hirundo pristoptera, Rüpp. N. Wirb. t. 39. fig. 2 (1835, descr. orig.).

Atticora pristoptera, Gray, Gen. of B. i. p. 58 (1845); *id.* Cat. Fiss. Brit. Mus. p. 21 (1848); Bonap. Consp. Gen. Av. i. p. 337 (1850); Müll. Journ. f. Orn. 1855, p. 4; Heugl. Journ. f. Orn. 1861, p. 420, et 1863, p. 4; Brehm, Reise nach Habesch, p. 208 (1863).

Chelidon pristoptera, Rüpp. Syst. Uebers. p. 22 (1845).

Chelidon (?) *pristoptera*, Heugl. Syst. Uebers. p. 17 (1856).

Psalidoprocne pristoptera, Sclater, P. Z. S. 1864, p. 109; Heugl. Orn. N.-O. Afr. p. 148 (1869); Blanf. Geol. & Zool. Abyss. p. 349 (1870).

"*Atticora albiscapulata*, Rüpp.," Boie, Isis, 1844, p. 172.

Atticora albiscapulata, Gray, Hand-l. of B. i. p. 73 (1869).

Pristoptera typica, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Above glossy blue-black, with a greenish tinge on the wings and tail; quills greenish black, the inner web dusky; tail much forked, greenish black above, dusky underneath; under surface of the body glossy blue-black; under wing-coverts white. Total length 5·5 inches; of bill from front 0·2, from gape 0·4; wing 4·4; tail 3·0; tarsus 0·35, middle toe 0·4, hind toe 0·2, lateral toes 0·25.

Hab. North-eastern Africa; Galla Country, Central and Northern Abyssinia to 17° N. (*Heuglin*); Dongolo, Tigré (*Blanford*).

According to Von Heuglin, this species is a migratory bird in Abyssinia, and appears about the end of April or the beginning of May in the localities above given. It lives in pairs in the rocky parts of the country from 4000 to 10,000 feet above the sea, breeds about the beginning of July in holes in the rocks, and lays two white eggs. It has two broods a year. Von Heuglin (*l. c.*) also gives some more, very interesting details respecting its habits.

The description and measurements are taken from an adult specimen kindly lent me by Mr. Blanford. He shot it himself on the 15th of May, 1868, at Dongolo in the province of Tigré, at an elevation of 6500 feet. He also informs that he saw it occasionally in the highlands of Abyssinia and also in the Anseba valley, but never below 4000 feet elevation.

3. PSALIDOPROCNE NITENS.

Atticora nitens, Cass. Proc. Acad. Philad. 1857, p. 38 (descr. orig.); Hartl. Orn. Westafr. p. 261 (1857); Cass. Proc. Acad. Philad. 1859, p. 33; Hartl. Journ. f. Orn. 1861, p. 103; Du Chaillu, Equat. Afr. p. 472 (1861).

Above glossy greenish black, very bright and distinct both above and below; quills dark brown, glossed with greenish above, as also is the tail, which is quite square; bill black; feet light brown. Total length 4·3 inches, wing 3·8, tail 2·2.

Hab. Muni and Ogobai Rivers, Gaboon (*Du Chaillu*).

This is a beautiful little Swallow, of apparently a more robust build than either *Ps. holomelæna* or *Ps. pristoptera*, which, by reason of their long forked tails, have a graceful and slender appearance. The plumage of the present species is also much more brilliant and glossy. The description and measurements are from a very fine skin in the British Museum, from West Africa.

4. PSALIDOPROCNE ALBICEPS.

Psalidoprocne albiceps, Sclater, P. Z. S. 1864, p. 108, pl. xiv.; Heugl. Orn. N.-O. Afr. p. 147.

Atticora albiceps, Finsch & Hartl. Orn. Ost-Afr. p. 133 (1869).

I am unable to give a detailed description of this beautiful Swallow, as the original specimen, which was preserved in spirit and presented by Dr. Sclater to the British Museum, cannot now be found. The following is Dr. Sclater's original description:—

“*P. nigra, pileo et gula summa albis.*”

“Long. tot. 5·5, alæ 4·2, caudæ rectr. ext. 3·1, rectr. med. 2·2 poll.

“Capt. Speke has brought home in spirit from Uzinza a single example of this apparently new Swallow of the section *Psalidoprocne*. It seems to form a third of this little African group, which is distinguished from true *Hirundo* by its long cleft tail, short tarsi, small feet, and the saw-like margination of the outer edge of the first primary.”

Colonel Grant has mentioned it in his ‘Walk across Africa’ (p. 127), and has also very kindly favoured me with a note:—

“Extract from my journal dated ‘Usui, Central Africa, Oct. 16, 1861. Black Swallow with white forehead and throat under the jaw, with forked tail. Black Swallow, smaller*. Seen together about scarped rocks; at least it was here I first observed them.”

* This is the bird referred by Von Heuglin to *Ps. obscura*. I think it just as likely to be the female of *Ps. albiceps*.

Subfam. II. HIRUNDININÆ.

Conspectus generum Hirundininarum.

- | | |
|---|---------------------------|
| a. tarsi plumosis | 2. <i>Chelidon</i> . |
| b. tarsi nudis. | |
| a'. naribus supra membrano haud obtectis. | |
| a''. naribus rotundatis | 3. <i>Petrochelidon</i> . |
| b''. naribus ovalibus | 4. <i>Phedina</i> . |
| b'. naribus supra membrano obtectis. | |
| a''. rectrice extima haud producta | 5. <i>Cotyle</i> . |
| b''. rectrice extima producta; cauda furcata. | |
| a'''. tarso superiore nudo | 6. <i>Waldenia</i> . |
| b'''. tarso superiore plumoso | 7. <i>Hirundo</i> . |

Genus 2. CHELIDON.

Type.

Chelidon, Boie, Isis, 1822, p. 550 *Ch. urbica*.*Clavis specierum.*

- | | |
|---|----------------------|
| a. pogonio interno rectricis extimæ fuliginoso-nigra..... | 1. <i>urbica</i> . |
| b. pogonio interno rectricis extimæ basin versus albo notato | 2. <i>albigena</i> . |

1. CHELIDON URBICA.

Chelidon urbica, Rüpp. Neue Wirb. p. 106 (1835); *id.* Syst. Uebers. p. 22 (1845); Bolle, Journ. f. Orn. 1854, p. 460; Müll. Journ. f. Orn. 1855, p. 3; Heugl. Syst. Uebers. p. 17 (1856); *id.* Journ. f. Orn. 1861, p. 419; Brehm, Reise nach Habesh, p. 272 (1863); Heugl. Orn. N.-O. Afr. p. 168; Blanf. Geol. & Zool. Abyss. p. 349 (1870).

Hirundo urbica, Keul. Ned. Tijdschr. iii. p. 384 (1866).

Hab. North-eastern Africa and Arabia (*Heuglin*, av. migr.); Koomayli (*Blanford*); Cape Verde Islands (*Bolle*); Ilha do Principe (*Keulemans*).

Dr. von Heuglin states that this species is "a bird of passage in North-eastern Africa and Arabia, in February and March, and again from August to the beginning of October, partly singly, partly in great flocks, in company with other species." Mr. Blanford shot a female at Koomayli on the 2nd of February, 1868.

Dr. Bolle (*l. c.*) refers to its appearance in the Cape Verde Islands in great swarms in April 1852 at Fuertaventura. They disappeared as suddenly as they came. The most extraordinary fact in relation to the migration of the present bird is its occurrence in Prince's Island, on the West Coast of Africa. Here Mr. Keulemans shot it under the circumstances mentioned in the accompanying note with which he has favoured me:—

"During the month of January I was living at a plantation about 1500 feet above the sea-level, and I was one evening very much surprised to see a Swallow flying round my house. I had before often seen Swifts (*Cypselus abyssinicus*), but never a Swallow before in that neighbourhood. As it was rather late in the evening, and I had no small shot in my gun, I was obliged to let it go, hoping to see it again afterwards. Fearing lest I might lose the chance of

getting the bird, I stayed at the plantation the whole of the next day, keeping a sharp look-out, till at last my patience was rewarded by observing the Swallow about 5 o'clock in the afternoon flying round in company with the Swifts. As it came once pretty near, a well-directed shot secured the bird; but, as bad luck would have it, the upper mandible and almost the entire head were blown away by the discharge, so that it was quite spoilt for preserving. However curious the appearance of a House-martin so far south may have been, there was no question about the identity of the species, the feathered legs setting all doubts on this point at rest. The natives of Prince's Island who saw me kill the bird were as much surprised as myself, never having seen the species before on the island. I may add that this was the only time I met with *Hirundo urbica* during my travels in Western Africa."

2. CHELIDON ALBIGENA.

Chelidon albigena, Heugl. Journ. f. Orn. 1861, p. 419; *id.* Orn. N.-O. Afr. p. 169 (1869).

Ch. *affinis* Ch. *urbicæ*, *sed rectrice extima macula alba basin versus notata distinguenda.*

Hab. Bogos Country (*Von Heuglin*).

Never having seen the present bird, I am unable to furnish a detailed description. According to Dr. von Heuglin it is allied to *Chelidon urbica*, but differs in the circumscribed cheek-stripe, the scarcely forked tail, the colour of the abdomen, and the white spot on the inner web of the outer tail-feather. This last character appears to me to be the most striking, and will serve to distinguish the species. Dr. von Heuglin obtained his specimens in the neighbourhood of Keren in the Bogos Country, where, however, it was not met with by Messrs. Blanford and Jesse.

Genus 3. PETROCHELIDON.

Type.

Petrochelidon, Cab. M. Hein. Th. i. p. 47 (1857). *P. melanogaster*.

1. PETROCHELIDON SPILODERA.

Hirundo spilodera, Sundev. Æfv. Kongl. Vet. Akad. Förh. Stockh. 1850, p. 108 (descrip. orig.); Gray, Hand-l. of B. i. p. 70 (1869).

Phedina spilodera, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Hirundo lunifrons, Layard, B. of S. Afr. p. 56 (1867, errore).

Hirundo alfredi, Hartl. Ibis, 1868, p. 153, pl. 4 (descrip. orig.).

Head dark brown, obscurely glossed with dark blue; lighter brown towards the nape; back and scapularies deep blue, the feathers edged latitudinally with white, giving a striped appearance to the whole back, the scapularies and wing-coverts just faintly edged with rusty white; the lower part of the back blue, not marked with the stripes; rump and upper tail-coverts pale rufous; wing-coverts and quills brownish black, a slight blue gloss on the latter and

on the extremities of the quills; tail brownish black, also slightly glossed with blue; a patch of feathers in front of the eye pale sienna; cheeks, ear-coverts, and sides of the neck dark blue; chin white, throat tinged with sienna and covered with little black spots, below this a blackish band marked with whitish; under surface of the body white, washed on the upper part of the breast and on the flanks with sienna, a few scattered black spots on the breast; under tail-coverts and vent pale rufous, some of the former entirely black, and the others rufous with a blackish spot. Total length 5·9 inches; of bill from front 0·4, from gape 0·6; wing 4·5; tail 2·1; tarsus 0·5, middle toe 0·45, hind toe 0·2.

Hab. Middleburg, Cape Colony (*Jackson, Layard*); Transvaal (*Ayres*).

The exact locality of the specimens originally described by Prof. Sundevall is not given; but, as they were collected by Wahlberg, it is most probable that they came from Caffraria or Natal.

I had for a long time been puzzled as to what the true *Hirundo spilodera* of Sundevall really was; and I was therefore delighted to find at Leyden one of the typical specimens collected by Wahlberg and received in exchange from the Stockholm Museum. I at once saw that the lately described *Hirundo alfredi* of Hartlaub was identical, as any one will admit who compares the two diagnoses. That of Prof. Sundevall is given in the 'Öfversigt' of the Stockholm Academy; and as this work is often inaccessible to the working ornithologist, I reproduce his description here verbatim, merely adding that to the student of African ornithology the paper by the learned Professor is one of the highest interest, as it contains an account of Wahlberg's ornithological discoveries in Southern Africa. A set of the 'Öfversigt' is in the Society's library.

The following is Sundevall's description (*l. c.*):—

“*HIRUNDO SPILODERA*, n. sp. *Fusca, dorso cæruleo-nitido, albo vario; uropygio crissoque fulvis, gutture pectoreque antico fulvis nigro maculatis. Cauda fusca, immaculata, tantum leviter emarginata, pennis obtusis. Caudæ tectrices maximæ nigræ. Lora fulva. Nares rotundatæ. Ala 112, tars. 12; cauda 58.*”

This, placed side by side with the diagnosis of *Hirundo alfredi*, leaves no doubt as to the identity of the two birds. The description given by me is taken from the afore-mentioned specimen in the Leyden Museum, which is a male from Caffraria (*Wahlberg*). Mr. Gurney is no doubt right in supposing that the bird figured in the 'Ibis' is an adult; but the plate, obliterating as it does all trace of the peculiar striped appearance of the back, destroys the identity of the species.

In order to make assurance doubly sure, I wrote to my friend Dr. Tristram, who very kindly sent me for examination the type of *Hirundo alfredi*, so that I have now carefully examined the typical specimens of both *Hirundo spilodera* and *H. alfredi*, and am satisfied of the complete identity of the two species.

Genus 4. PHEDINA.

Type.

Phedina, Bonap. Riv. Contemp. Tor. 1857, p. 4 .. *P. borbonica*.*Clavis specierum*.

- a.* tectricibus subcaudalibus albis medio late brunneo striatis 1. *borbonica*.
b. tectricibus subcaudalibus fere omnino albis 2. *madagascariensis*.

1. PHEDINA BORBONICA.

Hirondelle de l'île de Bourbon, Buff. Pl. Enl. 544. fig. 2.*Wheat-Swallow*, Lath. Syn. ii. pt. 2. p. 581 (1783, ex Buff.).

Hirundo borbonica, Gm. Syst. Nat. i. p. 1017 (1788, ex Buff.);
 Lath. Ind. Orn. ii. p. 580 (1790); Gray, Gen. of B. i. p. 58
 (1845); Schl. & Poll. Faun. Madag. Ois. p. 68 (1868); Gray,
 Hand-l. of B. i. p. 71 (1869).

Cotyle borbonica, Bonap. Consp. Gen. Av. i. p. 342 (1850).

Phedina borbonica, Bonap. Rivist. Contemp. Torin. 1857, p. 4;
 Newt. Ibis, 1861, p. 271; Maill. Notes Réunion. p. 162 (1862);
 Newt. Ibis, 1862, p. 270, et 1863, p. 340; Coq. Alb. de la Réunion.
 1865, pp. 19, 20, fig. 2.

Above dark greyish brown, the centres of the feathers marked down the shaft with a narrow streak of black, very distinct on the rump; wing-coverts dark blackish brown; quills black above, greyish underneath; tail blackish brown above, dark brown beneath, paler on the inner web; lores black; cheeks, sides of the neck, and of the breast greyish brown, with darker shaft-stripes; rest of the under surface of the body white, longitudinally striped with dark brown, the upper part of the breast and flanks somewhat greyish; bill black; feet brown. Total length 5·4 inches, of wing 4·65, tail 2.

According to the late M. Coquerel, a variety of this bird is met with in Réunion; but Mr. Pollen has stated his opinion that this is but a stage of plumage of the ordinary species.

The description and measurements are taken from a specimen kindly lent me by Prof. Newton. It is a male procured by his brother (Mr. Edward Newton) in the Mauritius on the 18th of June, 1862. In the 'Ibis' for 1862 the last-named gentleman states that "since the hurricane of February 1861, which lasted for six days, he did not see a single specimen of *Phedina borbonica* in this island. They were never very numerous." Subsequently he writes (Ibis, 1863, p. 340), "I may here mention, with reference to my remark (Ibis, 1862, p. 270, note) that the hurricane of 1861 has not entirely exterminated this species in Mauritius, but it is certainly much rarer; for at the locality in the district of Savanne, where I have observed it to be most plentiful, I remained for ten days, in June 1862, and never observed more than three at once, and as they were always at the same place, they might have been the same individuals."

2. PHEDINA MADAGASCARIENSIS.

Phedina madagascariensis, Hartl. Faun. Madag. p. 27 (1861).

Phedina, sp., Roch & E. Newt. Ibis, 1862, p. 270; E. Newt. Ibis, 1863, p. 340.

Above rather pale brownish grey, the shafts of all the feathers being distinctly marked; wing-coverts and quills blackish brown, the latter paler underneath; tail dark brown, somewhat lighter on the inner webs; lores black; cheeks, sides of the neck, and breast greyish brown with darker shaft-stripes; rest of the under surface of the body white, with thin longitudinal stripes, the lower part of the abdomen and under tail-coverts pure white, the shafts of the feathers only indicated by a narrow line of brown; sides of the breast and flanks greyish brown; bill black; feet dark brown. Total length 5·5 inches, of wing 4·7, tail 0·2.

Hab. Madagascar (*Hartlaub*).

Dr. Hartlaub, in 1861, separated the *Phedina* from Madagascar as a distinct species, though no direct evidence had been received till recently to confirm this decision. Lately, however, I had the pleasure of receiving, in a small collection of birds sent from North Madagascar by Mr. Crossley, two specimens of this species; and the colour of these birds is certainly paler than in the Mauritius specimens, and the abdomen and under tail-coverts are nearly pure white. I therefore keep the two birds distinct; and it should be remembered that on both occasions of his visiting Madagascar Mr. Edward Newton saw a *Phedina* flying about which he believed to be distinct from the bird of Réunion, with which he was well acquainted.

Genus 5. COTYLE.

Cotile, Boie, Isis, 1822, p. 550 Type.
C. riparia.
Biblis, Less.

Clavis specierum.

- a. torque pectorali.
 - a'. tectricibus subalaribus brunneis 1. *riparia*.
 - b'. tectricibus subalaribus albis.
 - a''. major: rectrice extima versus apicem alba 2. *eques*.
 - b''. minor: rectrice extima omnino brunnea 3. *cincta*.
- b. torque pectorali nullo.
 - a'. majores: rectricibus albo maculatis.
 - a''. pectore superiore cum gula immaculata rufescentibus: subtus saturate nigricanti-brunnea 4. *fuligula*.
 - b''. gula alba vel pallide fulvescente.
 - a'''. gula brunneo notata 5. *rupestris*.
 - b'''. gula albicante, immaculata 6. *obsoleta*.
 - b'. minor: rectricibus immaculatis 7. *paludicola*.

1. COTYLE RIPARIA.

Cotyle riparia (Linn.); Rüpp. Syst. Uebers. p. 22 (1845); Sclater, Contr. to Orn. 1852, p. 124; Müll. Journ. f. Orn. 1855, p. 5; Heugl. Syst. Uebers. p. 17 (1856); Heugl. Orn. N.-O. Afr. p. 165 (1869); Finsch & Hartl. Orn. Ost-Afr. p. 145.

Cotyle littoralis, Hempr. & Ehr. in Mus. Berol. (*teste Heuglin*).

Adult male. Above dark earthy brown, a little paler on the lower part of the back and upper tail-coverts; throat and cheeks white,

extending on to the sides of the neck; abdomen and under tail-coverts white; upper part of the breast, flanks, and under wing-coverts dark earthy brown, with a slight dash of grey; bill black; feet dark brown. Total length 5 inches, of wing 3·9, tail 1·9.

Young. Similar to the adult, but not such a deep brown, and having the wing-coverts, secondary quills, and lower part of the back edged with fulvous; the breast-band not nearly so dark as in the adult, and edged with grey, the brown colour not extending so distinctly on to the flanks, so that the greater part of the breast is white; bill black; feet dark brown. Total length 4·5 inches, wing 3·9, tail 1·7.

This, our well-known Sand-martin, only extends into North-eastern Africa. Dr. von Heuglin states that it is rather rare in N.E. Africa and Arabia.

2. COTYLE EQUES.

Cotyle eques, Hartl. P. Z. S. 1866, p. 325.

Hirundo torquata, Keul. Ned. Tidschr. iii. p. 384 (1866).

Hab. Ilha do Principe (*Dohrn, Keulemans*).

I have never seen a specimen of this bird, which, however, would seem to be distinct from *Cotyle cincta* by reason of the white spot on the outer tail-feather. Mr. Keulemans gives me the accompanying details respecting it:—

“I observed this species for several days in Prince’s Island. The first time was in June, when I found a pair flying along the shores of the bay which is near the town of the island. They were very tame, and were continually resting on the twigs of some small tree or bush. This species did not seem to be very strong on the wing; for after flying up and down for a few moments, both birds repeatedly rested for some time. I shot one, which proved to be the female; but, judging from what I saw of the living birds, the male did not appear to differ in colour. I unfortunately did not secure the latter; for, immediately on the fall of his mate, he flew up high in the air and disappeared. In September I saw another individual sitting in exactly the same place where I had already killed the previous one, but I was obliged to abstain from shooting it, for fear of hitting some nigger boys who were in the neighbourhood. The call-note of this bird is like that of *Hirundo rustica*; but I did not hear any song. The present species is known to the inhabitants as an occasional visitor, and is called by some of them *Pascusha*, by others *Undurinka*. They also assert that it is found all through the year in the high mountains in the interior of the island, and comes sometimes to the shore.”

3. COTYLE CINCTA.

Hirondelle brune à collier du Cap de Bonne Espérance, Buff. Pl. Enl. 723.

Hirundo cincta, Bodd. Tabl. Pl. Enl. p. 45 (1783, ex Buff.).

Cotyle cincta, Gray, Gen. of B. i. p. 60 (1845); *id.* Cat. Fiss. Brit. Mus. p. 30 (1848); Horsf. & Moore, Cat. B. Mus. E.-I. Co.

i. p. 97 (1854); Layard, B. of S. Afr. p. 58 (1867); Gurney, Ibis, 1868, p. 43; Heugl. Orn. N.-O. Afr. i. p. 164 (1869); Finsch & Hartl. Orn. Ostaf. p. 144 (1870); Blanf. Geol. & Zool. Abyss. p. 349 (1870).

Brown-collared Swallow, Lath. Gen. Syn. ii. p. 577.

Hirundo torquata, Gm. Syst. Nat. i. p. 1022 (1788); Lath. Ind. Orn. ii. p. 579 (1790); Bon. et Vieill. Enc. Méth. ii. p. 522 (1823).

Cotyle torquata, Rüpp. Syst. Uebers. p. 22 (1845); Bonap. Consp. Gen. Av. i. p. 342 (1850); Müll. J. f. O. 1855, p. 4; Heugl. Syst. Uebers. p. 17 (1856); *id.* Ibis, 1859, p. 339; *id.* Peterm. Mitth. 1861, p. 21.

Adult. Above greyish brown, darker on the head and paler on the rump, where the dark shafts of the feathers become plainer; quills dark brown, the secondaries edged at the tip with whitish, tail dark brown, narrowly margined with whitish, no spots on the inner webs; lores black; ear-coverts dark brown; a patch of feathers extending from the nostrils to the eye, throat, breast, under wing- and tail-coverts pure white; a band across the breast and thighs brown; bill black; feet dark brown; eye hazel. Total length 6 inches, of wing 4·8, tail 2·0.

Young. Similar to the adult, but has the plumage somewhat darker; rump very pale brown with a light rufous tinge; the whole of the upper surface, quills, and the band on the breast with rusty edgings to the feathers; bill dark horny brown; feet brown. Total length 6 inches, wing 4·7, tail 2·0.

Hab. N.E. Africa (*Rüppell, Heuglin*); Natal (*Mus. R. B. S.*); Cape Colony (*Layard*).

This species must stand as *Cotyle cincta* (Bodd.), as this name, founded on Buffon's 723rd plate, takes precedence over Gmelin's name of *torquata*, also founded on the same plate. The name of the latter, however, has generally been assigned by writers on North-eastern Africa to the Abyssinian bird, either by an oversight or from a supposition that it was distinct from the South-African form. I have had the opportunity of comparing an Abyssinian specimen with a series of skins in my collection from Natal and the Cape Colony, and I am unable to detect any characters whereby to distinguish them specifically. The Abyssinian bird is just a trifle larger, but in my opinion it cannot in any way be separated from the South-African species to which Boddaert's name is primarily referable.

The present species is distinguished from all the other Sand-martins (1) by its large size, (2) by the pure white under the wing-coverts. With the exception of this latter difference, it is a large edition of our Common Sand-martin (*Cotyle riparia*), of which it is the southern representative, as Mr. F. R. Surtees well remarked to me in one of his letters.

As regards its occurrence in N.E. Africa, Dr. von Heuglin writes as follows:—"This bird is a migrant in N.E. Africa. Rüppell found it in Barakit, I at Adowa, Mareb, Provinces of Dembea and Eifag, from early in May, through the rainy season, and in October at a marsh between Tedjura and Ghubet-haráb on the Adail coast."

4. COTYLE FULIGULA.

L'Hirondelle fauve, Levaill. Ois. d'Afr. v. p. 156, pl. 246.

Hirundo fuligula, Licht. in Forst. Descr. Anim. p. 55 (1844); Grill, Zool. Anteckn. p. 36 (1858).

Cotyle fuligula, Gray, Gen. of B. i. p. 60 (1845); *id.* Cat. Fiss. Brit. Mus. p. 29 (1848); Bonap. Consp. Gen. Av. i. p. 342 (1850); Cab. Mus. Hein. Th. i. p. 164 (1850); Cass. Cat. Hirund. Phil. Acad. p. 12 (1853); Sundev. Crit. om Levaill. p. 52 (1857); Müll. Journ. f. Orn. 1855, p. 5; Hartl. Orn. Westafr. p. 28 (1857); Hartl. Journ. f. Orn. 1861, p. 103; Layard, Birds of S. Afr. p. 57 (1867); Bocage, Journ. Lisb. 1868, p. 40; Heugl. Orn. N.-O. Afr. i. p. 164 (1869); Gray, Hand-l. of B. i. p. 73 (1869).

Hirundo hyemalis, Forst. Descr. Anim. p. 55 (1844).

Above dark greyish brown, having a faint olive-green gloss in certain lights, paler on the rump and upper tail-coverts, the shafts of latter being distinctly marked; wing-coverts dark brown, with the same olive-green gloss as the back in some lights; quills dark brown, grey underneath; tail rather paler brown, all the feathers except the two centre ones having a conspicuous white spot on the inner web, this being exceedingly small or sometimes wanting altogether on the outermost rectrix; lores dark blackish brown; entire throat and breast deep fulvous; flanks and abdomen dark brown tinged with fulvous; under wing-coverts fulvous; bill and feet black. Total length 5·7 inches, wing 5·3, tail 2·0.

Hab. South Africa (*Layard*); Damara Land (*Andersson*); Angola (*Henderson*); Abyssinia (*Mus. Brit.*); Nubia (*Verreaux*).

When fully adult there is no mistaking this species, the deep fulvous throat, in some specimens quite rufous, and the general robust form of the bird being quite sufficient to distinguish it from all the African species of *Cotyle*. The absence of spots on the throat serve to separate it from *C. rupestris*, with which I have every reason to believe it has been confounded by some writers. In the Cape Colony it would appear to be not uncommon. I have a specimen in my collection, obtained by the late Mr. C. J. Andersson at Daviep in Damara Land; and it has been obtained by Signor Anchieta at Biballa.

There are certainly two distinct subspecies of the present bird, a northern and a southern form, the latter of course being the true *C. fuligula*. The British Museum also contains several specimens from N.E. Africa. But I cannot agree that the two forms from Southern and North-eastern Africa are positively identical. The Abyssinian subspecies is always smaller and darker. The following table gives the measurements of six specimens, amongst which are those of two birds in the British Museum from the last-named locality:—

		Total length.	Wing.	Tail.
1.	<i>Cotyle fuligula</i> . Abyssinia	5·2	4·8	2·2
2.	„ „ „	5·5	4·6	2·2
3.	„ „ South Africa	6·0	5·2	2·2
4.	„ „ „	5·7	5·3	2·25
5.	„ „ „	5·7	5·3	2·2
6.	„ „ Damara Land	5·8	5·0	2·25

Now, although there are evident differences in the two birds, I do not think it well to give a separate name to the northern bird, as there are already so many of these races in Africa which have received distinct appellations, and, as far as my experience goes, this practice has caused much confusion.

As I remark hereafter, I believe that Dr. Finsch was not quite correct in assigning a specimen brought home by Mr. Jesse from Abyssinia to the present species.

5. COTYLE RUPESTRIS.

Cotyle rupestris (Scop.); Brehm, Journ. f. Orn. 1853, p. 452; Müll. Journ. f. Orn. 1855, p. 5; Tristr. Ibis, 1867, p. 368; Heugl. Orn. N.-O. Afr. p. 163 (1869); Blanf. Zool. Abyss. p. 350 (1870).

Above pale greyish brown, darker on the head; wing-coverts and quills dark brown, showing in some lights a faint greenish gloss; tail very dark brown, the two middle and two outermost tail-feathers unspotted, the others with an oval white spot on the inner web; throat and breast buffy white, the former thickly marked with small spots of brown, the rest of the under surface of the body rather dark brown with a tinge of buff throughout; under wing- and tail-coverts very dark brown, edged at the tip with fulvous white; bill black; feet light brown. Total length 5·3 inches, wing 5·1, tail 1·8.

Hab. N.E. Africa. Rare in Egypt (*Brehm*); Abyssinia, Senafé (*Blanford*).

The above description is taken from a European specimen, and must not be too implicitly relied on for exact correspondence with the bird from North-eastern Africa. But I described a specimen of true *C. rupestris* advisedly, inasmuch as I am not convinced as to the absolute specific identity of the form occurring in Africa with that which occurs in Southern Europe. On the contrary, my belief is that, like *C. fuligula*, there are two subspecies of *C. rupestris*—one the true *C. rupestris* from Southern Europe, the other a diminutive subspecies, darker in plumage altogether, occurring in North-eastern Africa (*Blanford*), probably Egypt (*Adams*), Palestine certainly (*Tristram*), India probably (*Jerdon*, B. of Ind. i. p. 166), and certainly China (*Swinhoe*). The probability of the correct identification of the Indian and Egyptian birds depends on future observation; but I have myself examined specimens from the other localities. Mr. Blanford's Abyssinian bird, shot near Senafé, at an elevation of 7500 feet, belonged certainly to the small race of *C. rupestris*, and I could not distinguish it from others in the British Museum.

The bird which Dr. Finsch identified in Mr. Jesse's collection as *Cotyle fuligula* does not really belong to that bird or to its northern subspecies, but to the small race of *C. rupestris*. It has spots on the throat, and is exactly similar to a bird in Lord Walden's collection from Jericho. I very much question the occurrence of true *Cotyle fuligula* away from Southern Africa; and therefore I think that the bird thus named by Verreaux from Nubia (Hartl. J. f. O.

1861, p. 103) likewise belongs to the small dark-coloured subspecies of *C. rupestris*.

6. COTYLE OBSOLETA.

Cotyle obsoleta, Cab. Mus. Hein. Th. i. p. 50 (1850); Müll. Journ. f. Orn. 1855, p. 5; Hartm. Journ. f. Orn. 1863, p. 238; Gray, Hand-l. of B. i. p. 74 (1869).

Cotyle rupestris, Rüpp. Syst. Uebers. p. 22 (1845); Vierth. Nauman. 1855, p. 471; Heugl. Syst. Uebers. p. 17 (1856); Taylor, Ibis, 1859, p. 47; Heugl. Peterm. Mitth. 1861, p. 21; Adams, Ibis, 1864, p. 14; Hartm. Journ. f. Orn. 1864, p. 387.

Cotyle cahirica, Brehm, Journ. f. Orn. 1853, p. 163, et Extrah. p. 96.

Cotyle palustris, Tristr. Ibis, 1867, p. 363 (nec Steph.).

Cotyle paludibula, Tristr. Ibis, 1869, p. 437 (nec Rüpp.).

Above very pale greyish brown, dark on the head and nape; wing-coverts and quills darker brown, with light edgings to the feathers, these being narrow in adult, broad in young birds; rump and upper tail-coverts very pale greyish brown; tail-feathers light greyish brown, with a white spot on the inner web of all the feathers except the two middle and two outer rectrices; chin whitish, unspotted; throat and breast white with a very faint fulvous tinge; under tail-coverts darker greyish brown, with faint edgings of pale brown; under wing-coverts greyish brown mottled with white; bill dark brown; feet light brown. Total length 5 inches, wing 4·65, tail 1·75.

Hab. Resident in Egypt, Nubia, and Abyssinia, as also on the coast and Sinaitic mountains (*Heuglin*); Egypt (*Brehm*); Nubia, Fifth Cataract of the Nile (*Galton, spec. Mus. Brit.*); Syria (*Bartlett*); Palestine (*Tristram*).

I had already in my collection a Syrian specimen obtained by Mr. Edward Bartlett which I had noted as different from the usual *C. rupestris*; and after some research I found that it must be the *Cotyle obsoleta* of Cabanis from North-eastern Africa. This species is said to be exceedingly close to *C. rupestris*, but distinctly smaller and paler in colour. The underside from the chin to below the breast is almost pure white, the spots on the throat wanting; and the reddish blush is much more faintly developed, or is more or less absent altogether; hence the colour of the belly and vent appears more uniform with the colour of the breast. The white spots on the tail are smaller. This is a very good diagnosis indeed, and exactly illustrates the difference between *C. rupestris* and *C. obsoleta*.

The present bird appears to be the common Crag-martin of Egypt, and has been united by almost all writers on the ornithology of that country to the larger and darker-coloured *C. rupestris*. The latter species appears to be rare in Egypt, although it is noticed by Dr. Brehm, and is also probably the bird to which Dr. Leith Adams (*l. c.*) refers when he says:—"Some males are darker in plumage than others; this I noted particularly in one individual

shot in Upper Egypt." *Cotyle obsoleta* also occurs in Palestine, according to Dr. Tristram (*l.c.*), who, however, confounds it with *C. palustris*. More recently he refers again to the same subject (*Ibis*, 1869, p. 437), and, while admitting the distinctness of the bird in question from *C. rupestris* and *C. fuligula*, proposes to call it by Rüppell's name, *C. paludibula*.

Now it appears to me that the name *C. paludibula*, as it stands in the 'Systematische Uebersicht,' is nothing more than a misprint for *C. paludicola* (= *C. palustris*), which, though Dr. Tristram does not seem to be aware of the fact, occurs in North-eastern Africa, identical in form with true *C. paludicola* from South Africa. Again, Rüppell evidently refers to the last-named bird under the name of *paludibula*; for his *C. rupestris* is said to be "common in Egypt the whole year," which we know applies to *C. obsoleta*, but not to true *C. rupestris* (Scop.); and therefore his *C. paludibula* cannot be *C. obsoleta*. I have endeavoured to set the matter right in the list of synonyms given above.

7. COTYLE PALUDICOLA.

Hirondelle des Marais ou la Burnette, Levaill. Ois. d'Afr. v. p. 158, pl. 246. fig. 2 (1806).

Hirundo paludicola, Vieill. Nouv. Dict. 2^{de} éd. xiv. p. 511 (1817); *id.* Enc. Méth. ii. p. 523. no. 19 (1823); Guérin in Ferr. et Gal. Voy. en Abyss. iii. p. 242 (1847); Des Murs, Voy. en Abyss. p. 79 (1847).

Cotyle paludicola, Sundev. om Levaill. p. 52 (1857); Grill, Zool. Anteckn. p. 36 (1858); Heugl. *Ibis*, 1859, p. 339; Kirk, *Ibis*, 1864, p. 320.

Cotyle paludibula, Rüpp. Neue Wirb. p. 106 (1835); *id.* Syst. Uebers. p. 22 (1845); Heugl. Syst. Uebers. p. 17 (1856).

Hirundo palustris, Steph. Gen. Zool. x. p. 101 (1817).

Cotyle palustris, Cab. Mus. Hein. Th. i. p. 49 (1850); Bonap. Cosp. Gen. Av. i. p. 34 (1850); Müll. Journ. f. Orn. 1855, p. 5; Layard, Birds of S. Afr. p. 58 (1867); Gurney, *Ibis*, 1868, p. 464.

Above brown, with lighter edgings to the wing-coverts and secondaries; throat and breast greyish brown, sides of the body a little darker brown; under wing-coverts brown mixed with white; abdomen and under tail-coverts pure white. Total length 4·7 inches, wing 4·0, tail 2·1.

Young birds are a little more reddish in colour, and have the upper plumage mottled. I am indebted to the Rev. H. B. Tristram for the loan of a specimen of the curious variety of this Martin from the Transvaal territory. It has not a trace of white on the abdomen.

Hab. Abyssinia (*Mus. Berol.*); Transvaal (*Ayres*); Cape Colony (*Layard, Ayres*).

It is doubtful which name ought really to be applied to this species, viz. *paludicola* of Vieillot, or *palustris* of Stephens, both founded on Levaillant's plate, and both published in the year

1817. I prefer to retain that of Vieillot, as the names of this author are generally recognized for Levaillant's figures. I think Mr. George Robert Gray is wrong * in referring the bird called by Rüppell *C. paludibula* to *C. fuligula* (Licht.); for Rüppell distinctly quotes Levaillant's plate 158. fig. 2, not fig. 1, as being the same species. It is evident that he has written Vieillot's name from memory, and thus published it as *paludibula* instead of *paludicola*. He again writes in this way in the 'Syst. Übersicht,' and Von Heuglin apparently copies the mistake.

8. COTYLE MINOR?

Cotyle minor, Cab. Mus. Hein. Th. i. p. 49 (1850).

Hab. North-eastern Africa (*Mus. Hein.*).

According to Dr. Cabanis this Martin approaches *C. riparia* and *C. palustris* in form and colour, but is larger than the former and smaller than the latter, and differs from both in the form of the tail, and also in the colour of the underside, as in this species both the grey breast-band and white throat are wanting. The chin and throat down to below the breast are yellowish grey.

I have now a specimen lying before me of what I take to be this species, brought from Abyssinia by Mr. Blanford, and I cannot see that it is really distinct from *Cotyle paludicola*. It appears to be identical with a Natal specimen of the latter in my own collection, with the exception of the length of the wing, which is longer in my Natal bird. I cannot perceive, even in the rather unsatisfactory diagnosis of Dr. Cabanis, any real characters whereby the species may be distinguished from *C. palustris*; but as I dislike to unite any species together without full evidence of their identity, I prefer to keep the present bird distinct, supposing that the Abyssinian specimen examined by me may, after all, not be the true *C. minor*, but *C. palustris*, which Dr. Cabanis also had in Heine's Museum from North-eastern Africa at the time he separated the former bird.

The specimen lent me by Mr. Blanford was shot by him on Lake Ashangi, where he informs me it was rare. The measurements are as follows:—

	Whole length.	Wing.	Tail.	Tarsus.	Middle toe.
1. <i>C. minor</i> (?)	4·5	3·9	1·7	0·3	0·4
2. <i>C. palustris</i>	4·6	4·0	2·0	0·3	0·4

Genus 6. WALDENIA.

Waldenia, Sharpe, Ibis, 1869, p. 461 Type.
W. nigrata.

1. WALDENIA NIGRITA.

Hirundo nigrata, Gray, Gen. of B. pl. 20 (1845); *id.* Cat. Fiss. Brit. Mus. p. 27 (1848); Allen and Thomps. Exp. Niger, ii. p. 498 (1848); Cass. Cat. Hirund. Mus. Philad. Acad. p. 3 (1853);

* Cat. Fiss. Brit. Mus. p. 30.

Hartl. Journ. f. Orn. 1855, p. 360; Cass. Proc. Phil. Acad. 1859, p. 33; Du Chaillu, Eq. Afr. p. 472 (1862); Gray, Hand-l. of B. i. p. 71 (1869).

Atticora nigrita, Bonap. Consp. Gen. Av. i. p. 337 (1850); Hartl. Journ. f. Orn. 1853, p. 398; Müll. Journ. f. Orn. 1855, p. 3; Hartl. Orn. Westaf. p. 25 (1857).

Waldenia nigrita, Sharpe, Ibis, 1869, p. 461.

Above glossy purplish blue; chin dusky; throat white; rest of the under surface of the body purplish blue, but more dusky than the back; tail distinctly washed with dark blue above, underneath brownish black, the greater part of the inner web white; bill black; feet brown. Total length 4·5 inches; of bill from front 0·35, from gape 0·6; wing 4·3; tail 1·6; tarsus 0·35, middle toe 0·4, hind toe 0·2.

Young. Dusky purplish blue, the white throat-spot not quite so large, the tail square, or only slightly forked, and the white spots on the inner web oval and small.

Hab. Fantee (*Pel*); Rio Boutry (*Pel*); Calabar (*Mus. Paris*); R. Niger (*Thompson*); Camma River (*Du Chaillu*); Gaboon (*Mus. R. B. S.*).

The idea that this species ought to be generically separated was entertained long ago by the late Mr. Cassin, who wrote in 1859 as follows:—

“This fine species seems to indicate a distinct subgeneric group, having the bill and form of typical *Hirundo*, with a shorter tail. Its colour, too, pure black, with the throat white, is quite characteristic.”

Genus 7. *HIRUNDO*.

	Type.
<i>Hirundo</i> , Linn. Syst. Nat. i. p. 343 (1766)	<i>H. rustica</i> .
<i>Cecropis</i> , Boie, Isis, 1826, p. 971.....	<i>H. capensis</i> .
<i>Uromitrus</i> , Bonap. Rivist. Contemp. Torino, 1857,	
p. 4.....	<i>H. filifera</i> .
<i>Hemicecrops</i> , Bonap. Rivist. Contemp. 1857, p. 4	<i>H. dimidiata</i> .
<i>Lillia</i> , Boie, Journ. f. Orn. 1858, p. 364.....	<i>H. rufula</i> .

Clavis specierum.

A. dorso postico et uropygio cæruleis.

a. capite cæruleo: fronte rufa.

a'. gula intense rufa.

a''. majores: subcaudalibus rufis vel rufa tinctis.

a'''. subtus alba, rufo tincta, caudæ maculis albis..... 1. *rustica*.

b'''. subtus intense castanea, caudæ maculis fulvo tinctis..... 2. *riocouri*.

b''. minores.

c'''. subcaudalibus nigricanti-fuscis ... 3. *angolensis*.

d'''. subcaudalibus purissime albis ... 4. *lucida*.

b'. gula alba.

c''. major: torque pectorali distincto 5. *albicularis*.

d''. minor: torque pectorali interrupto 6. *æthiopica*.

- b.* capite toto cæruleo.
c'. subtus albæ.
c''. secundariis externe albis 7. *leucosoma*.
f''. secundariis externe cæruleis, primariis
concoloribus 8. *dimidiata*.
d'. subtus cærulea 9. *atrocærulea*.
c. capite toto pallide rufo 10. *filifera*.
B. dorso postico et uropygio fuscis, capite fusco 11. *griseopyga*.
C. dorso postico rufo, uropygio albescente..... 12. *rufula*.
D. dorso postico et uropygio rufis, concoloribus.
a. capite cæruleo.
a'. subtus albicantes.
a''. major: striis pectoralibus obsoletis 13. *melanocrissa*.
b''. minor: striis pectoralibus distinctis . . . 14. *domicella*.
b'. subtus rufæ.
c''. majores: gula albicante.
a'''. maculis caudalibus nullis 15. *senegalensis*.
b'''. maculis caudalibus albis 16. *monteiri*.
d''. minores: gula rufa.
c'''. coloribus intensioribus: torque nu-
chali rufo interrupto 17. *semirufa*.
d'''. minor: torque nuchali nullo 18. *gordoni*.
b. capite rufo.
a'. major: subtus tenuiter striolata 19. *cucullata*.
b'. minor: subtus late striolata 20. *puella*.

1. *HIRUNDO RUSTICA*.

Hirundo rustica, Linn.; Jard. Ann. Nat. Hist. 1846, p. 86; Strickl. and Sclater, Contr. to Orn. 1852, p. 144; Müll. Journ. f. Orn. 1855, p. 4; Grill, Zool. Anteckn. p. 35 (1858); Hartl. Journ. f. Orn. 1861, p. 103; Heugl. Orn. N.-O. Afr. i. p. 151 (1869); Finsch & Hartl. Orn. Ost-Afr. p. 134 (1870).

Hirundo cahirica, Cass. Proc. Acad. Philad. 1859, p. 32.

Hab. North-Eastern Africa (*Heuglin*); Gold Coast (*Pel*); Old Calabar (*Jardine*); Gaboon (*Verreaux*); Camma River (*Du Chaillu*); Damara Land (*Andersson*); Cape Colony (*Layard*, *Surtees*); Natal (*Ayres*).

The few references given above are some not included in the otherwise very complete list of synonyms given by Dr. von Heuglin in his work on the Birds of North-Eastern Africa. To the account given by myself and Mr. Dresser (*ante*, p. 244) I cannot add anything. I think, however, that there cannot be the slightest doubt that the bird supposed to be *Hirundo cahirica* by ornithologists, from Western Africa, is only *H. rustica* shot in full spring plumage on its way northwards.

2. *HIRUNDO RIOCOURI*.

Hirundo riocouri, Sav. Descr. de l'Égypte, p. 270, pl. 4. fig. 4 (1813, descr. orig.); *id.* Descr. 2^{de} éd. p. 339 (c. 1820); Cab. Mus. Hein. Th. i. p. 46 (1850); Sharpe and Dresser, P. Z. S. 1870, p. 247.

Cecropis riocouri, Boie, Isis, 1826, p. 971; Rüpp. Syst. Uebers. p. 22 (1845); Heugl. Syst. Uebers. p. 16 (1856).

Hirundo savignii, Steph. Gen. Zool. x. p. 90 (1817).

Hirundo cahirica, Licht. Verz. Doubl. p. 58 (1823); Gray, Gen.

of B. i. p. 57 (1845); Bonap. Consp. Gen. Av. i. p. 338 (1850); Cass. Cat. Hirund. Phil. Acad. p. 2 (1852); Müll. Journ. f. Orn. 1855, p. 4; Bonap. Rivist. Contemp. Torin. 1857, p. 4; Cass. Proc. Acad. Philad. 1859, p. 33; Blas. Naum. 1859, p. 254; Hartl. Journ. f. Orn. 1861, p. 103; Tristr. Ibis, 1862, p. 278; Antin. Cat. Coll. Ucc. p. 26 (1865); Blyth, Ibis, 1866, pp. 237, 336; Gurney, Ibis, 1866, p. 423; Taylor, Ibis, 1867, pp. 56, 57; Tristr. Ibis, 1867, p. 361; Saunders, Ibis, 1869, p. 396; Heugl. Orn. N.-O. Afr. p. 152; Gray, Hand-l. of B. i. p. 68 (1869); Elwes and Buckl. Ibis, 1870, p. 200.

Hirundo boissoneauti, Temm. Man. d'Orn. iv. p. 652 (1840); Linderm. Vög. Griechenl. p. 119 (1860).

Cecropis boissoneauti, Brehm, Journ. f. Orn. 1853, p. 452.

Hirundo rustica, var. *orientalis*, Schl. Rev. Crit. p. xviii (1844); Adams, Ibis, 1864, p. 14.

Hirundo rustica, var. *savignii*, Bree, B. of Eur. iii. p. 170.

Above rather dull steel-blue; quills washed externally with dull greenish steel-blue; tail brownish black, glossed on the upper surface with dull greenish steel-blue, all the spots on the inner webs of the feathers pale buff; forehead chestnut; space between the bill and the eye black; throat and entire under surface chestnut; a broad band across the upper part of the breast dusky black, washed with steel-blue; bill black; feet dark brown. Total length 6·5 inches, wing 4·5, tail 3.

Hab. Egypt (*Taylor, Adams, et al.*); Palestine, on the coast (in the maritime plains) and throughout the length of the Jordan valley (*Tristram*); Nubia (*Rüppell*); ? Greece (*Lindermayer*); ? Constantinople (*Robson*).

The limited range which I allow to this species will doubtless be surprising to some ornithologists who are accustomed to believe that *H. riocouri* occurs and breeds with *H. rustica* in various portions of Europe, and, further, that it has occurred in England. Notwithstanding that it is in direct contradiction to the opinion of Professor Blasius, who is worthily considered one of our first authorities on European ornithology, I venture to suggest that *Hirundo riocouri* is strictly a South-eastern European bird, possessing a very limited range, and that all the specimens set down as this species which have occurred in Western Europe are nothing but the full spring plumage of *Hirundo rustica*. I have seen so many specimens marked in collections as the former bird which are nothing more than *H. rustica*, that I confess I require more positive evidence before I can bring myself to believe that *H. riocouri* occurs as other than an accidental visitor away from Egypt and Palestine. This being my conviction, I fear that Professor Blasius has been mistaken in supposing that it breeds regularly in Western Europe and pairs with *H. rustica*. Again, however, on the other hand, the learned Professor states that Mr. Olph-Galliard exhibited at a meeting in Cöthen a specimen of the supposed *H. riocouri* taken at St. Gothard; and he also states that he had received specimens from Europe as intense in colour as African skins (Naumannia, 1859, p. 254). As regards the

occurrence of the bird on the St. Gothard, it is just possible that a specimen may have been taken there, and that it may occur as an accidental visitor, since Mr. Howard Saunders (*l. c.*) has found an undoubted specimen of *H. riocouri* in the Museum at Catania. That the species is really an occasional migrant to the west, appears to me most probable, for the same reason that *Chettusia leucura*, another Egyptian bird, occurs in Malta; but I cannot but believe that the more common *Hirundo rustica* in the spring plumage, when the underparts are a very bright rust-colour, has often been mistaken for the true *H. riocouri*. If this really prove to be the case, the statement made by Professor Blasius, and reproduced by Dr. Bree, will require some modification. Its occurrence in Greece, where it is said to breed, appears to rest on pretty good authority; but I should like to see specimens from that country.

The types of Temminck's *H. boissoneauti* are stated by him to have come from Greece and Tripoli; and he gives the habitat of the bird as Andalusia and Greece, and probably the northern portion of Africa. I omitted to examine Temminck's types when at Leyden, but would suggest that, as in the case of the Tschagra Shrike (*Telephonus cucullatus*) the existence of the present species in Spain is imaginary.

In Mr. George Robert Gray's 'Genera,' and in Mr. Bree's 'Birds of Europe,' this bird is said to be the *Hirundo savignyi* of Leach. I cannot find the description. In Tuckey's Expedition to the Congo (p. 407), the present species is stated to have been procured, and is included on this authority in Dr. Hartlaub's work on the ornithology of Western Africa. I much question the correct identification of the specimens, and have not included Congo in my list of localities. Again, Mr. Cassin has stated that the Philadelphia Museum has a specimen from Monrovia, and also that Du Chaillu collected it on the River Camma. In both these instances I believe the full spring plumage of *H. rustica* to have been mistaken for *H. cahirica*.

In conclusion, I beg leave to assert that I by no means wish to deny the occurrence of *H. cahirica* in any of the localities mentioned by various authors, but that at present the evidence does not satisfy me. I shall, however, be the first to retract my views on receiving satisfactory information for the extension of the geographical distribution of this species of Swallow.

The bird from Eastern Siberia mentioned by Pallas (Zoogr. Ross.-As. i. p. 530), and suggested by Prof. Schlegel as being probably the present species (Rev. Crit. p. xviii.), is the *Hirundo horreorum* of North America, of which I have specimens in my collection from Lake Baikal.

3. *HIRUNDO ANGOLENSIS*.

Hirundo angolensis, Bocage, Journ. Acad. Lisb. 1868, p. 47; Sharpe, P. Z. S. 1869, p. 567, pl. xliii.; Bocage, Journ. Acad. Lisb. 1869, p. 339.

Forehead, throat, and upper part of the breast deep brick-red; entire upper surface rich steel-blue, having a greenish lustre in some lights; tail gradually forked, the two middle feathers steel-blue, the

whole of the inner web white, except a black border at the tip ; a narrow interrupted band across the breast, below the red throat, steel-blue ; rest of the breast and under tail-coverts ash-coloured, a little paler in the centre of the breast, the under tail-coverts washed with rufous, each feather margined with pale grey, and having a little heart-shaped blue mark before the end of the feather, the black shaft being also strongly defined ; under wing-coverts dark ashy grey, washed on the edge of the wing with steel-blue ; beak and legs black.

Hab. Angola : Huilla, Pungo-Andongo, Ambaca (*Anchieta*), Ambriz (*Monteiro*).

4. *HIRUNDO LUCIDA*.

Hirundo lucida, Verr. Journ. f. Orn. 1858, p. 42 ; Hartl. Journ. f. Orn. 1861, p. 103 ; Gray, Hand-l. of B. i. p. 68 (1869) ; Sharpe, P. Z. S. 1869, p. 567.

Above most brilliant steel-blue, inclining to indigo ; wing-coverts dark blackish brown, glossed with steel-blue above, the innermost cubital feathers with a white spot on the inner web ; tail deep steel-blue, all the feathers except the two middle ones for the most part pure white on the inner web, so that the tips and the part immediately edging the graduated extremity of the feather is black ; a distinct though narrow frontlet and the entire throat deep brick-red ; a band across the breast, below the red throat, bright steel-blue, broad at the sides and narrow in the centre of the breast ; rest of the under surface of the body pure white, with a few dusky feathers on the flanks, and marked with narrow blue lines, more distinct in some specimens than in others ; bill and feet black.

Hab. River Gambia (*Mus. R. B. S.*).

5. *HIRUNDO ALBIGULARIS*.

Hirundo albigularis, Strickl. Contr. Orn. 1849, p. 17, pl. 15.

Hirundo albigula, Bonap. Consp. Gen. Av. i. p. 338 (1850) ; Müll. Journ. f. Orn. 1855, p. 4 ; Gurney, Ibis, 1865, p. 264 ; Layard, Birds of S. Afr. p. 55 (1867) ; Gray, Hand-l. of B. i. p. 68 (1869).

Hirundo rufifrons, Less. Traité d'Orn. p. 268 (1831, nec Vieill.) ; Grill, Zoolog. Anteckn. p. 34 (1858).

Above deep purplish blue ; quills dark blackish brown, with a faint gloss on the upper surface ; the innermost cubital feathers marked on the interior web with a greyish white spot ; tail blackish brown, the two centre feathers unspotted, but all the others marked on the inner web with a large patch of white ; forehead deep chestnut ; space between the bill and the eye and ear-coverts dusky black ; throat, cheeks, and sides of the neck white ; below the throat a broad band of purplish-blue feathers, broad at the sides and narrow in the centre of the breast ; the rest of the under surface of the body dull white, greyish on the flanks ; bill black ; feet dark brown.

Hab. Cape Colony (*Layard*) ; Natal (*Ayres*).

6. *HIRUNDO ÆTHIOPICA*.

Hirundo æthiopica, Blanf. Ann. Nat. Hist. 1869, p. 329; Gray, Hand-l. of B. i. p. 401 (1869); Blanf. Zool. Abyss. p. 347 (1870).

Hirundo albigularis, Heugl. Orn. N.-O. Afr. p. 153 (1869).

Cecropis rufifrons, Vieith. Naum. 1853, p. 20; Brehm, Journ. f. Orn. 1853, p. 453, et Extrah. p. 96; Heugl. Syst. Uebers. p. 16 (1856); Vierth. Naum. 1857, p. 110; Brehm, Reise nach Habesch, p. 209 (1863).

Hirundo rufifrons, Des Murs in Lefebvr. Voy. in Abyss. Zool. p. 78 (1845); Heugl. Journ. f. Orn. 1861, p. 420, et 1863, p. 168; Hartm. Journ. f. Orn. 1864, p. 152.

Above purplish blue; forehead deep chestnut; lores sooty black; cheeks dull black, slightly glossed with purplish blue; quills brownish black, paler on the under surface, the upper surface glossed with dark greenish steel-blue; the inner cubital feathers marked with a whitish spot on the inner web; tail blackish brown, above glossed with dark greenish steel-blue, all but the two central feathers having an oblong white spot on the inner web; under surface pearly white, with a crescent-shaped mark of purplish blue feathers on each side of the upper part of the breast, not forming a complete band; under tail-coverts white, some of the shafts conspicuously indicated, and a small black spot on the outer web of some of the longest; bill black; feet dark brown. Total length 5 inches, wing 4·1, tail 2·5.

Hab. N. E. Africa (*Heuglin, Blanford*).

7. *HIRUNDO LEUCOSOMA*.

Hirundo leucosoma, Swains. Birds of W. Afr. ii. p. 74 (1837); Fras. P. Z. S. 1843, p. 51; Gray, Gen. of B. i. p. 58 (1845); *id.* Cat. Fiss. Brit. Mus. p. 24 (1848); Bonap. Consp. Gen. Av. i. p. 339 (1850); Hartl. Journ. f. Orn. 1853, p. 398; Müll. Journ. f. Orn. 1855, p. 4; Hartl. Orn. Westafr. p. 27 (1857), et Journ. f. Orn. 1861, p. 103; Sharpe, Ibis, 1869, p. 188; Gray, Hand-l. of B. i. p. 70 (1869).

Chelidon leucosoma, Boie, Isis, 1844, p. 171.

Hemicerops leucosoma, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Above dark glossy blue; a white longitudinal bar on the wing, which is produced by the inner secondaries being for the most part broadly edged externally with pure white; tail graduated, dark blue above, dusky beneath, all the feathers except the two middle ones marked with white on the inner web, the exterior feathers having a large oval spot, which gradually gets smaller on the feathers as they approach the centre of the tail, till in the two next to the central feathers it is reduced to a small oval spot; entire under surface with the under wing- and tail-coverts pure white; bill and feet black. Total length 4·8 inches, of bill from front 0·3, from gape 0·45; wing 4·0; tail 1·8; tarsus 0·3; middle toe 0·4, hind toe 0·2, lateral toe 0·2.

Hab. Fantee (*Sharpe*); Accra (*Fraser*); Gaboon (*Verreaux*).

Swainson gives no definite locality for his specimen, though we may conclude it is from Senegal, like most of his other West-African birds. It does not seem to have occurred there, however, from the record of other collectors, and the three localities mentioned above are the only ones that can positively be depended upon.

It is a pretty little species, closely allied to *H. dimidiata*, Sund., with which Grill (Zool. Anteck. p. 36) seems to have confounded it; but it may always be distinguished by the conspicuous white alar bar, and the white on the tail.

8. *HIRUNDO DIMIDIATA*.

Hirundo dimidiata, Sundev. Œfv. Kongl. V. Ak. Stockh. 1850, p. 107; Hartl. Ibis, 1862, p. 144; Layard, B. of S. Afr. p. 56 (1867); Chapm. Trav. in S. Afr. ii. p. 410 (1868); Layard, Ibis, 1869, p. 72; Gray, Hand-l. of B. i. p. 71 (1869).

Hirundo scapularis, Cass. Proc. Acad. Phil. v. pl. 12 (1850); *id.* Cat. Hirund. Phil. Acad. p. 2 (1853).

Hemicecrops dimidiata, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Hemicecrops scapularis, Bonap. Rivist. Contemp. Torin. 1857, p. 4.

Hirundo leucosoma, Grill, Zool. Anteckn. p. 36 (1858, nec Sw.).

Adult. Above purplish blue; quills brownish black, grey on the inner web, the innermost of the greater wing-coverts white, forming a white spot, which, however, is generally concealed by the scapularies; occasionally in very old birds a small white spot also appears on the innermost secondaries; tail brownish black, without any spots, glossed on the upper surface with dark blue, with a faint greenish lustre; entire under surface silky white, having in some specimens a certain woolly appearance, greyish in certain lights; on each side of the upper part of the breast a patch of dark blue feathers; bill black, feet brown. Total length 5·5 inches, wing 4·2, tail 2·6, tarsus 0·4.

Young. Not nearly so bright above, and more distinctly tinged with greenish; the white spot on the greater wing-coverts either absent altogether, or, when present, of a dull greyish colour and very little developed.

Though belonging to the same section of the genus *Hirundo*; the present bird is certainly quite distinct from *H. leucosoma*, Sw., as it has no white on the tail-feathers, whereas the latter species has the greater part of the inner web white, as in *H. lucida*. We may regard these Swallows as showing a slight aberration from true *Hirundo* and inclining to *Waldenia*, which is also a short-tailed Swallow; and in its turn *Waldenia* leads to *Progne*.

The late Mr. Cassin named this bird *scapularis*; and from the figure given (*l. c.*) it would seem as if it really possessed white scapulars, but this is a misnomer; for on none of the true scapulars does this white appear. When I first began this paper I had very few specimens of *Hirundo dimidiata* for comparison; but through the kindness of Mr. Layard and Mr. Surtees I have recently had several in all stages of plumage from apparently the young bird, when no trace of the white patch can be discerned, up to the very old

bird, where the white patch is very fully developed. I was therefore nearly sure that Professor Sundevall's *H. dimidiata* and Mr. Cassin's *H. scapularis* were one and the same species in different stages of plumage; but as neither in the original description of Prof. Sundevall nor in that given by Mr. Layard (*l. c.*) is any mention made of this little white patch of feathers, I wrote to the former gentleman to ask him if the type specimens possessed the peculiarity. Every communication of Prof. Sundevall's is always read with great interest by ornithologists, so that I make no apology for giving his answer in his own words.

"Stockholm, Oct. 24, 1869.

"MY DEAR SIR,—With regard to your last letter (of Oct. 13th), I must mention that I have always considered the *Hirundo scapularis* of Cassin to be the same as my *H. dimidiata*. But in describing the bird I had only three specimens, two males and a female, from Port Natal, of which one went to Leyden in 1853 in exchange, and the other two (♂ ♀) are still here. Now these two specimens have the whitish mark on the wings so small and so well hidden by the scapulars that I had not observed it in the least; and probably it was the same in the third specimen; otherwise I should not have given it away. Afterwards (in 1857) I received another specimen, a male from the Knysna (Eastern Cape Colony), which has the white mark very large and apparent, but in the natural situation of the feathers it is perfectly hidden by the scapulars; and I do not believe this character will denote a specific difference, as it seems to me to be merely an individual variation. I have seen one more specimen from Knysna and one from Damara-land, which had both very conspicuous white marks. The species seems to be spread over the whole of Southern Africa (and probably breeds in the north); and if your specimens are from this quarter of the world, I think they will certainly be the above-named species. In my specimen from Knysna the white mark is a little greyish, and consists of the last two greater tectrices of each wing: the last is almost wholly whitish; the next has only the interior (dorsal) web whitish. Besides, the last little cubital feather (that is the last of the so-called tertiaries) is clouded with grey at the base, with a little white basal spot, which I do not observe in the Natal birds; this marking, however, is covered by the whitish tectrices. With regard to the Natal birds, there is a little difference in the extent of white in the two specimens. The mark is well-defined, and not at all as represented in Cassin's figure, where it is much too large and undefined. In my two specimens from Port Natal the marks are very small and greyish, only forming a spot on the inner web of the two mentioned feathers, and is a little different in the two birds. I think my name of *dimidiata* must be retained, as it is published in the April part of our 'Efversigt' for 1850, Cassin's description being published in the June part of the Philadelphia 'Proceedings' of the same year. The same remark applies to my *H. holomelas* and his *A. hamigera*. To the description of the *H. dimidiata* I would add that the under-side is tolerably pure white when seen directly or straight in front;

but seen a little from behind, it has a conspicuous greyish lustre, like that of a piece of silk.

“I am, &c.,

“C. J. SUNDEVALL.”

To the above remarks of the learned Swedish Professor I do not think I can add any thing.

9. *HIRUNDO ATROCÆRULEA*.

Hirundo atrocærulea, Sund. Öfv. Kong. Vet. Akad. Förh. 1850, p. 107; Gurney, Ibis, 1863, p. 152; Layard, Birds, of S. Afr. p. 55 (1867); Gurney, Ibis, 1868, p. 152; Gray, Hand-l. of B. i. p. 70 (1869).

Entirely glossy blue-black, a little more dusky underneath; the shafts of the primaries and tail-feathers white and very plain on the underside; bill black; feet dark brown. Total length 7·2 inches; of bill from front 0·3, from gape 0·5; wing 4·5; tail 4·6; tarsus 0·35, middle toe 0·4, hind toe 0·2.

Hab. Lower Caffraria (*Wahlberg*); Natal (*Wahlberg, Ayres*).

Professor Sundevall considers this Swallow to be of the same form as *H. rustica*. I differ from him; for I think it comes nearest to *H. filifera*, which it greatly resembles in the extreme length and wire-like elongation of the outer tail-feathers. At any rate, it is one of the most remarkable Swallows yet known, and it is to be regretted that it is at present so rare in collections. My description and measurements are taken from a specimen collected by Wahlberg in Natal, received in exchange from the Stockholm Museum.

10. *HIRUNDO FILIFERA*.

Hirundo filifera, Steph.; Cab. Mus. Hein. Th. i. p. 46 (1850); Heugl. Journ. f. Orn. 1862, pp. 288, 298; Kirk, Ibis, 1864, p. 320; Heugl. Orn. N.-O. Afr. i. p. 155 (1869).

Ubromitrus filifera, Brehm, Reis. Habesch, p. 209 (1863).

Hirundo flicauda, Müll. Journ. f. Orn. 1855, p. 5.

Cecropis flicauda, Brehm, Journ. f. Orn. 1853, p. 452.

Cecropis flicaudata, Rüpp. Syst. Uebers. p. 22 (1845); Heugl. Syst. Uebers. p. 14 (1856); Ant. Cat. Ucc. p. 26 (1865).

Hirundo ruficeps, Licht. Verz. Doubl. p. 68 (1823); Ferr. et Gal. Voy. Abyss. Zool. iii. p. 242 (1847).

Hirundo smithii, Leach, App. to Tuckey, Voy. Congo, p. 407 (1818); Müll. Journ. f. Orn. 1855, p. 4; Hartl. Orn. Westafr. p. 26 (1857), et Journ. f. Orn. 1861, p. 103.

Hirundo fuscicapilla, Heugl. Orn. N.-O. Afr. p. 154 (1869).

Hirundo velocissima, Pr. Wurt. MS. (teste Heuglin).

Hirundo anchietæ, Bocage, Journ. Lisb. 1867, p. 150 (descr. orig.) et p. 331.

Crown of the head bright chestnut; feathers before and round the eye dull black; ear-coverts, nape, and entire upper surface rich purplish blue; quills dark blackish brown, paler on the inner web, the upper surface glossed with deep steel-blue; tail black, the outer

web elongated and much attenuated, two centre feathers purplish blue, unspotted, the rest having a roundish white spot on the inner web; under surface white, faintly tinged with pink on the throat and upper part of the breast; a crescent-shaped patch of feathers on each side of the latter dull purplish blue; bill black; feet dark brown. Total length 5·7 inches, wing 4·3, tail 2·85.

Young. Crown dull brown; rest of the upper surface of the body brown, glossed with dull blue; tail quite square, or only slightly emarginate; underparts white, beautiful light pink on the throat and upper part of the breast.

Hab. Casamanze (*Leconte*); Chisalla Island, Congo (*Tuckey*); Benguela (*Anchieta*); Zambesi (*Kirk*); Dongola, Berber, Kordofan, Bahr-el-azrag, and Abyssinia between 2500 and 3000 feet altitude (*Heuglin*); Agula (*Blanford*).

Lord Walden considers that no differential characters can be found to separate the Indian and African examples of this species. As regards myself, I have not seen a sufficient number of specimens from Africa to warrant my giving a decisive answer on this point; but as far as my experience goes I am inclined to differ from his lordship.

I have examined several specimens from Africa, but have never met with any one so fine as those which we get from India; but on the other hand, I have seen Indian specimens not fully grown which it would be impossible to distinguish from the ordinary run of African specimens. The description and measurements are taken from a bird, apparently fully adult, from the Zambesi, in Lord Walden's collection. That of the young is taken from a specimen in the British Museum, collected by Livingstone at Tette.

11. *HIRUNDO GRISEOPYGA.*

Hirundo griseopyga, Sunder. Œfv. Kongl. V. Akad. Förh. Stockh. 1850, p. 107 (descr. orig.); Layard, B. of S. Afr. p. 55 (1867).

Atticora griseopyga, Heugl. Orn. N.-O. Afr. p. 149 (1869).

Atticora melbina, Verr. Rev. et Mag. de Zool. 1851, p. 310 (descr. orig.); Strickl. Contr. to Orn. 1851, p. 163; Hartl. Journ. f. Orn. 1853, p. 398; Müll. Journ. f. Orn. 1855, p. 3; Hartl. Orn. Westafr. p. 25 (1857); Cass. Proc. Phil. Acad. 1859, p. 33; Hartl. Journ. f. Orn. 1861, p. 103.

Hirundo melbina, Strickl. Contr. to Orn. 1851, p. 131.

Atticora cypseloides, Heugl. Journ. f. Orn. 1862, p. 297, et 1864, p. 276.

Entire head, lower part of back, and rump dull brownish grey; middle of the back and wing-coverts dark blue; quills brownish black glossed with dull blue; tail dull brown, glossed above with blue; lores black; a narrow line of feathers extending backwards over the eye whitish; cheeks and ear-coverts dull grey-brown; under surface of the body milky white, the sides of the upper part of the breast being greyish brown; bill and feet pale brown. Total length 5·8 inches, of wing 3·9, tail 3·3.

Hab. Natal (*Wahlberg*); Gaboon (*Verreaux*); Camma River (*Du Chaillu*); Cape Lopez (*Du Chaillu*); Abyssinia (*Heuglin*).

Of this rare bird I have only seen the single specimen in the British Museum, from which I have taken the above description. The nostrils being rather injured in this specimen, I can hardly give a decided opinion; but from what I could see, I am not at all sure that this species is a typical *Hirundo*. It seems likely that Drs. Finsch and Heuglin, who agree in uniting the West-African with the South-African bird, are right in this identification; but I cannot speak with certainty, as I have never seen specimens from both localities.

12. *HIRUNDO RUFULA*.

Hirundo rufula, Temm.; Brehm, Journ. f. Orn. 1853, p. 453.

Cecropis rufula, Vierth. Naum. 1855, p. 472.

Cecropis alpestris, Heugl. Syst. Uebers. p. 16 (1856).

Hirundo alpestris, Heugl. Orn. N.-O. Afr. i. p. 158 (1869);
Blanf. Abyss. p. 346 (1870).

Head and upper part of the back rich purplish blue, with the usual white streaks on the top of the back; wing-coverts like the back, but slightly duller; quills blackish brown, grey on the inner web, the outer web glossed with dull purplish blue, having a slight greenish tinge; lower part of the back sienna, shading into very pale fulvous on the rump; upper tail-coverts rich purplish blue; tail blackish brown, glossed on the upper surface with purplish green; space between the bill and the eye pale fulvous; a narrow line of feathers extending backwards over the eye, ear-coverts, sides of the neck, and a collar encircling the neck sienna, very deep in some specimens; cheeks and entire under surface pale fulvous-white, covered with small longitudinal streaks marking the shaft of the feather, these streaks disappearing on the abdomen; the apical portion of the under tail-coverts purplish green; bill black; feet dark brown. Total length 7 inches, wing 4·8, tail 4·0.

Hab. Egypt (*Brehm*); Nubia (*Brehm*); Koomayli (*Blanford*).

This species is not included in Rüppell's list; but the above-mentioned authorities entitle it to a place in the avifauna of North-eastern Africa.

I prefer keeping this species under the name of *Hirundo rufula* of Temminck, inasmuch as there can then be no doubt as to the bird intended, and I am pretty certain that two distinct species have been confounded under the variously assigned names of *H. alpestris*, Pall., *H. daurica*, Linn., and *H. rufula*, Temm. I can by no means positively determine what the Swallow intended by the two first-named authors really is; but as no mention is made of the pale-coloured rump which forms so striking and important a feature in the bird now under consideration, I cannot consider it to be identical with Pallas's species. At the same time I have a specimen of *H. rufula*, identical with others from Palestine, in my collection from Dauria; but unless we receive positive information that no other Swallow, save *H. rufula*, is found in Dauria, whence came Pallas's type, we gain nothing; and until I am in possession of a larger series of these Cecropine Swallows to settle the matter, I prefer to employ Temminck's name, as then there can be no confusion.

13. *HIRUNDO MELANOCRISSA*.

Cecropis melanocrissus, Rüpp. Syst. Uebers. p. 22 (1845); Des Murs in Lefebvr. Voy. Abyss. Zool. p. 79 (1849); Müll. Journ. f. Orn. 1855, p. 5; Heugl. Syst. Uebers. p. 16 (1856).

Hirundo melanocrissa, Gray, Hand-l. of B. i. p. 69 (1869).

Hirundo rufula (pt.), Bonap. Consp. Gen. Av. i. p. 339 (1850).

Above deep indigo-blue glossed with purple, the usual white lines on the upper part of the back; feathers in front of the eye black; a narrow line of feathers from the base of the bill extending backwards over the eye, sides of the neck and round the nape and forming an interrupted nuchal collar deep sienna; rump paler sienna; quills brownish black, glossed with greenish steel-blue; upper tail-coverts deep steel-blue; tail-feathers brownish black, glossed with greenish above; cheeks and throat pale buffy white, the shafts of the feathers marked by small black lines; rest of the body buff, with faint marks; the apical end of the under tail-coverts glossy blue-black, having the appearance of a black crissum; bill black; feet dark brown. Total length 7 inches, of wing 4·7, tail 3·6.

Hab. North-Eastern Africa.

This species appears to be confined to North-Eastern Africa, where we learn from Dr. von Henglin that it is found chiefly in pairs throughout the rainy season up to February in Central Abyssinia, both in the mountains and in the valleys. Mr. Blanford also procured it in Abyssinia.

Professor Barboza du Bocage must surely be mistaken in the locality (Cape-Verde Islands) assigned by him to a specimen in the Lisbon Museum. If really from the west coast of Africa at all, it would most likely be *H. domicella*.

The description and measurements are taken from a fine specimen procured at Undel Wells.

14. *HIRUNDO DOMICELLA*.

Hirundo domicella, Finsch & Hartl. Orn. Ostaf. p. 143 (1870); Heugl. Orn. N.-O. Afr. p. 159 (1869).

Hirundo melanocrissa, Hartl. Orn. Westaf. p. 27 (1857); Hengl. J. f. O. 1863, p. 168 (var.); Antin. Cat. Coll. Ucc. p. 25 (1865), nec Rüpp.

Head, back, and scapulars deep indigo; feathers in front of the eye black; a thin narrow line of bright rufous extending over this line to the eye; ear-coverts and sides of the neck rich rufous, extending round the neck and forming a narrow collar; the feathers on the upper back loose, so that a few of the margins show, giving a striped appearance; wing-coverts dull steel-blue; quills brownish, slightly glossed with dull steel-blue, paler on the under surface and on the inner edge of the secondaries; lower part of the back and rump uniform rich sienna; upper tail-coverts glossy steel-blue; tail forked, black above, paler beneath, glossed on the upper surface with greenish steel-blue; under surface of the body white, fulvous on the breast and abdomen, and marked on the breast with a

few very narrow black striæ; under tail-coverts glossy steel-blue; under wing-coverts white.

Hab. N.E. Africa (*Heuglin*); Casamanze (*Verreaux*); River Gambia (*Mus. R. B. S.*).

15. HIRUNDO SENEGALENSIS.

Hirondelle à ventre roux de Sénégal, Buff. Pl. Enl. 310.

Hirundo senegalensis, Linn. Syst. Nat. i. p. 345 (1766); Swains. B. of W. Afr. ii. pl. 6 (1837); Jard. Contr. to Orn. 1849, p. 4; Bonap. Consp. Gen. Av. i. p. 339 (1850); Hartl. Journ. f. Orn. 1853, p. 399; Heugl. Orn. N.-O. Afr. p. 156 (1869); Müll. Journ. f. Orn. 1855, p. 4; Hartl. Orn. Westafr. p. 27 (1857); *id.* J. f. O. 1861, p. 103; Gray, Hand-l. of B. i. p. 69 (1869).

Hirundo rufula, Gould, Birds of Eur. pl. 55 (1837, nec Temm.).

Cecropis senegalensis, Rüpp. Syst. Uebers. p. 22 (1845); Cass. Cat. Hirund. p. 3 (1853); Heugl. Syst. Uebers. p. 16 (1856).

Hirundo melanocrissus, Heugl. Journ. f. Orn. 1862, p. 297 (nec Rüpp.).

Above purplish blue; sides of the head and back of the neck, almost forming a nuchal collar, as well as the entire rump, deep sienna; quills dull black, slightly glossed with blue; upper tail-coverts dull purplish blue; tail-feathers black, unspotted; throat and cheeks buffy white, as also are the under wing-coverts; rest of the underparts deep chestnut; bill black; feet very dark brown. Total length 9 inches, wing 5·7, tail 4·2.

Hab. Senegal (*Mus. Philad.*); River Gambia (*Mus. Brit.*); Casamanze (*Verreaux*); Fantee (*Gordon*); Ashantee (*Mus. Brit.*); N.E. Africa, up to 14° lat. (*Heuglin*).

16. HIRUNDO MONTEIRI.

Hirundo montei, Hartl. Ibis, 1862, p. 340, pl. 11; Gurney, Ibis, 1863, p. 116; Kirk, Ibis, 1864, p. 320; Gray, Hand-l. of B. i. p. 69 (1869); Bocage, Journ. Acad. Lisb. ii. p. 40 (1868); *id.* 1869, p. 339; Finsch & Hartl. Orn. Ostaf. p. 139 (1870).

Male. Above glossy blue-black, the head capped and united to the nape by a broad interrupted band of blue-black feathers; a narrow line of feathers from the base of the nostrils to the eye dusky black; space below this line, and the base of the beak, cheeks, and ear-coverts, whitish, tinged with grey on the latter; lower part of the back and rump deep chestnut; upper tail-coverts blue-black; quills dusky brown, with a dark greenish-blue lustre on the upper surface; tail greenish blue above, blackish underneath, with an oblong white spot on the inner web of the exterior tail-feathers; throat and under wing-coverts white, tinged with light rufous; a triangular patch of feathers on the side of the head extending from the eye backwards, nearly encircling the head, and extending down the sides of the neck very bright rufous; shoulders and sides of the chest dark blue-black, like the back; breast and under tail-coverts deep rufous, with a black spot near the tip of the

two interior feathers of the latter ; thighs white ; bill black ; feet dark brown.

Young. Above blue-black, but not so rich or so glossy as in the adult ; quills and tail dusky brown, with scarcely any perceptible gloss on the upper surface ; lower part of the back pale rufous ; throat, cheeks, and under wing-coverts pure white ; sides of the neck and breast rufous, but not so rich as in the adult ; under tail-coverts rufous, the basal half of the two interior feathers black.

Hab. Angola, Massangano and Cambambe (*Monteiro*) ; Biballa (*Anchieta*) ; Ambaca (*Anchieta*) ; Damara-land (*Andersson*) ; Zambesi (*Kirk*).

This fine species was first discovered by Mr. Monteiro in Angola, and would seem to be by no means uncommon in Damara-land, whence several specimens were sent to Europe by the late Mr. C. J. Andersson, principally from the vicinity of Elephant Vley in that country. It has since been procured by Dr. Kirk in the Zambesi ; and the description given above of the young bird is taken from a specimen sent home by him, and now in Lord Walden's collection.

17. *HIRUNDO SEMIRUFA*.

Hirundo semirufa, Sund. Œfv. Kong. Vet. Akad. Förh. 1850, p. 107 ; Sharpe, *Ibis*, 1869, p. 188 ; Ayres, *Ibis*, 1869, p. 290 ; Gray, *Hand-l. of B. i.* p. 69 (1869).

Above dark blue, inclining to indigo ; rump chestnut ; upper tail-coverts dark blue ; quills black, brownish underneath, glossed above with dark blue ; tail black glossed with blue above, every feather, except the two centre ones, having a very large white spot on the inner web ; space between the bill and the eye velvety black ; cheeks and ear-coverts deep blue-black ; entire under surface chestnut, very deep on the flanks and abdomen ; under wing-coverts fulvous ; edge of the wing fulvous mottled with black ; bill black ; feet dark brown.

Hab. Natal (*Wahlberg*, *Mus. R. B. S.*) ; Transvaal (*Ayres*).

18. *HIRUNDO GORDONI*.

Hirundo melanocrissa, Jard. Contr. to Orn. 1849, p. 4 (nec Rüpp.).

Hirundo gordonii, Jard. Contr. to Orn. 1851, p. 141, et 1852, p. 47 ; Müll. Journ. f. Orn. 1855, p. 4 ; Hartl. Orn. Westafr. p. 27 (1857) ; *id.* Journ. f. Orn. 1861, p. 103 ; Sharpe, *Ibis*, 1869, p. 188.

Cecropis gordonii, Cass. Proc. Phil. Acad. 1859, p. 33.

Above glossy indigo-blue, duller on the wing-coverts ; quills brownish black, glossed above, especially on the secondaries, with dark blue ; rump sienna ; upper tail-coverts dark indigo ; tail brownish black washed with dull indigo above, the inner webs of all but the six central feathers having a large white patch ; entire under surface sienna, a little paler on the throat, thighs, and under wing-coverts ; bill black ; feet dark brown. Total length 6·5 inches ; wing 4·5 ; tail 4.

Hab. Gambia (*Mus. Brem.*) ; Fantee (*Gordon*) ; Abouey (*Fra-ser*) ; Ashantee (*Mus. Brit.*) ; Gaboon (*Ferreaux*) ; Ogobai River (*Du Chaillu*).

19. *HIRUNDO CUCULLATA*.

Hirondelle à tête rousse du Cap de Bonne Espérance, Buff. Pl. Enl. 723. f. 2.

Hirundo cucullata, Bodd. Tabl. Pl. Enl. p. 45 (1783, ex Buff.); Gray, Gen. of B. i. p. 58 (1845); *id.* Cat. Fiss. Brit. Mus. p. 23 (1848); Müll. Journ. f. Orn. 1855, p. 4; Jard. Edinb. N. Phil. Journ. n. s. iii. p. 241 (1856); Gray, Hand-l. of B. i. p. 69 (1869); Heugl. Orn. N.-O. Afr. i. p. 162 (1869).

Hirundo capensis, Gm. Syst. Nat. i. p. 1019 (1788, ex Buff.); Bonap. Consp. Gen. Av. i. p. 339 (1850); Grill, Zool. Anteckn. p. 34 (1858); Layard, Birds of S. Afr. p. 54 (1867); Bocage, Journ. Lisb. 1868, p. 47.

Cecropis capensis, Boie, Isis, 1826, p. 971; Cab. Mus. Hein. Th. i. p. 47 (1850).

Head intense sienna, the base of the feathers blue-black, showing occasionally a few markings of this on the crown; upper part of the back and scapulars brilliant steel-blue, on the extreme upper part at the back of the neck marked with white, this appearance being caused by the whitish edging of the feathers; wing-coverts deep steel-blue, the edge of the wing marked with white, especially on the primary coverts, which are all edged with white; quills brownish black, lighter on the inner web, washed exteriorly with dark greenish steel-blue; lower part of the back pale sienna, much paler on the upper tail-coverts, where it is nearly white, the outermost upper tail-coverts steel-blue; tail brownish black glossed with dark greenish steel-blue, the middle feathers without any white spot on the inner web, the next two on each side with a small white spot on the inner web, and so on till the last, which have a very large white spot; beneath fulvous white, the shaft of each feather strongly marked with brown, these shaft-stripes being very small on the throat and cheeks; the sides of the body washed with pale sienna; under tail-coverts white, with very distinct shaft-stripes. Total length 7·8 inches; of bill from front 0·35, from gape 0·5; wing 5·1; tail 4·1; tarsus 0·6; middle toe 0·5, hind toe 0·35.

Young. Head dark brownish sienna, very pale on the sides of the neck, the base of the feathers conspicuously showing, so that a quantity of blue-black diamond-shaped marks appear on the head; back and scapulars steel-blue, with the white edgings to the feathers showing conspicuously on the upper part of the back; wing-coverts dark blackish brown, edged at the tip with pale sienna; quills blackish brown glossed with deep greenish steel-blue, the secondaries tipped with pale sienna; rump pale sienna, the white edging to the rump not very distinct, the shafts of all the feathers clearly defined; the blue upper tail-coverts edged with sienna; tail dark blackish brown glossed above with deep greenish steel-blue, the outer feathers not very long, but having the white spot on the inner web very large as in the adult, decreasing in size as it approaches the two centre feathers, which are unspotted; under surface of the body white tinged with fulvous, deepest on the flanks and abdomen, the shafts

of the feathers very broad and plain, but thicker and not giving such a striped appearance in the adult; bill dark brown; legs flesh-colour.

Hab. Cape Colony (*Layard*); Natal (*Jardine*); Transvaal (*Ayres*); Mossamedes (*Sala, Mus. Lugd.*); Huilla (*Anchieta*).

20. *HIRUNDO PUELLA*.

Hirundo puella, Temm. in Faun. Japon. *Aves*, p. 33 (1842, descr. orig.); Heugl. Orn. N.-O. Afr. p. 160 (1869); Gray, Hand-l. of B. i. p. 69 (1869); Finsch & Hartl. Orn. Ostaf. p. 160 (1870).

Hirundo abyssinica, Guér. Rev. Zool. 1843, p. 322 (descr. orig.); *id.* in Ferr. et Gal. Voy. en Abyss. iii. p. 240, t. 10 (1847); Des Murs in Lefebvr. Voy. Abyss. Zool. p. 77 (1845); Gray, Gen. of B. i. p. 58 (1845); Bonap. Consp. Gen. Av. i. p. 340 (1850); Hartl. Journ. f. Orn. 1853, p. 399, et 1855, p. 360; Müll. Journ. f. Orn. 1855, p. 4; Hartl. Orn. Westaf. p. 28 (1857), et Journ. f. Orn. 1861, p. 103; Kirk, Ibis, 1864, p. 320.

Cecropis abyssinica, Cass. Cat. Hirund. Phil. Acad. p. 3 (1853); Brehm, Reise nach Habesch, p. 209 (1863).

Cecropis striolata, Rüpp. Syst. Uebers. p. 18, t. 6 (1845, descr. orig.).

Hirundo striolata, Gray, Cat. Fiss. Brit. Mus. p. 23 (1848); Jard. Contr. to Orn. 1848, p. 4; Horsf. & Moore, Cat. Birds Mus. E.-I. Co. i. p. 94 (1854).

Head and back of neck pale sienna; back and scapulars bright steel-blue; wing-coverts duller steel-blue; lower part of the back and rump deep sienna; quills brownish black, glossed with dull greenish blue; tail-feathers brownish black, glossed above with greenish steel-blue, all the feathers except the centre ones having a large white spot on the inner web; underneath fulvous-white, profusely marked with broad longitudinal stripes of dark brown; under wing-coverts deeper fulvous; bill black; feet dark brown.

Hab. North-Eastern Africa (*Heuglin*); Fantee (*Gordon*); Rio Boutry (*Pel*); Ashantee (*Mus. Brit.*).

Compared with *H. cucullata*, the present bird is much smaller and more slender, the head and rump are darker sienna, and the breast is much more thickly striped than in the southern species.

The Tables herewith appended will give some idea of the geographical distribution of Swallows throughout the Ethiopian region; and it is worth noting that the curious representation of a species by one or more subspecies or races, so well known to every student of African ornithology, was never more fully elucidated than in the genus *Hirundo* as exhibited throughout the Ethiopian region. Thus—

<i>Hirundo albogularis</i> has its representative <i>H. æthiopica</i> .				
<i>H. dimidiata</i>	„	„	„	<i>H. leucosoma</i> .
<i>H. melanocrissa</i>	„	„	„	<i>H. domicella</i> .
<i>H. senegalensis</i>	„	„	„	<i>H. monteiri</i> .
<i>H. semirufa</i>	„	„	„	<i>H. gordonii</i> .
<i>H. cucullata</i>	„	„	„	<i>H. puella</i> .

Distribution of African Hirundinidæ.

Æthiopica.

Capensis.

Subregio Guineensis.

Subregio
Madagas-
cariensis.

4. Description of a new Species of Penguin.

By Dr. O. FINSCH, C.M.Z.S.

(Plate XXV.)

In a collection of birds received for inspection from the Counts Turati, of Milan, I was pleased to find a specimen of a Penguin, belonging to the genus *Dasyrhamphus*, which I take without hesitation to be a very fine and well-marked species. I propose to call this very interesting bird after the Count Ercole Turati, the proprietor of one of the richest and most extensive private collections in Europe.

DASYRHAMPHUS HERCULIS, sp. nov.

All the upper surface, from the angle of the mouth along the sides of neck to the edge of the humerus, and along the sides of the body to the tibia dark slate-coloured; the shafts of the feathers glossy black; all the under surface, from the chin, silky white; upper surface of wing slate-coloured, somewhat paler than the back; the primaries and secondaries white, forming a narrow white edging; under surface of wing pure white, with an angulated dark streak at the base of the humerus; the lower mandible at base bordered with a narrow band of brownish slate; bill horn-black, with a pale reddish gony and edge of the basal portion of the upper mandible; feet dirty orange; claws horny black.

Long. tota 24", alæ tot. 7", caudæ 3" 3"', rostri a fronte 13½"', a rectu 1" 10"', tarsi 15"', dig. med. 1" 9"', ej. unguis 9"', dig. int. 15"', ej. unguis 8½"', dig. ext. 1" 7"', ej. ung. 7½"'.

The exact locality of this Penguin is unknown; but there can be no doubt that it is from the Antarctic Seas.

This second species of a very interesting subgroup of the family Ptilopteri much resembles *D. adeliæ*, Hombr. & Jacq. (Voy. Pôle Sud, pl. 30; Gray, Ereb. & Terr. pl. 28), but is at once distinguishable by having the sides of the head, chin, and throat pure white; these parts being in *D. adeliæ* slaty blue, like the back. The British Museum also possesses a specimen of this white-throated species, as Mr. G. R. Gray kindly informs me, labelled *D. adeliæ*, jun.; but there can be scarcely any doubt of its being specifically distinct, the present bird showing no signs of being immature.

5. Characters of new Species of Birds collected by Dr. Habel in the Galapagos Islands. By P. L. SCLATER, M.A., Ph.D., F.R.S., and OSBERT SALVIN, M.A.

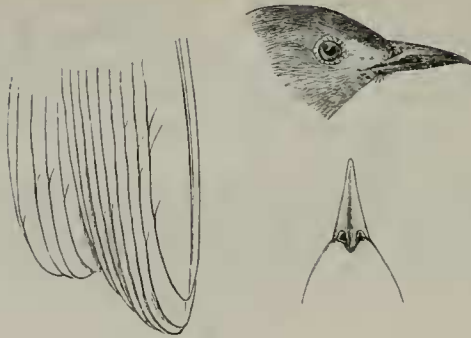
Dr. Habel, of New York, having placed in our hands for examination a collection of birds formed during a recent visit to the Galapagos, we lose no time in submitting to the Society the characters

of the new species which it contains, in order that Dr. Habel may have the credit of their discovery. We may state that we are preparing for publication a memoir on the avifauna of this group of islands, in which we propose to embrace what has previously been recorded on this subject, as well as the results of Dr. Habel's arduous investigations. We trust that this memoir will be deemed suitable for the Society's 'Transactions.'

In the meantime, however, to show the extent of Dr. Habel's collection, we add the subjoined summary of its contents, specifying under the head of each species the number of specimens obtained in each of the three islands in which birds were collected.

		Indefatigable Island.	Bindloes Island.	Abingdon Island.	Island un- certain.	Total number of specimens.
1.	<i>Mimus melanotis</i> , <i>Gould</i>	1	...	...	2	3
2.	<i>Dendroeca aureola</i> , <i>Gould</i>	54	2	7	...	63
3.	<i>Certhidea olivacea</i> , <i>Gould</i>	17	...	...	1	18
4.	— <i>fusca</i> , sp. n.	...	1	3	...	4
5.	<i>Geospiza strenua</i> , <i>Gould</i>	1	49	12	1	63
6.	— <i>fortis</i> , <i>Gould</i>	23	16	4	2	45
7.	— <i>fuliginosa</i> , <i>Gould</i>	28	...	...	3	33
8.	— <i>dentirostris</i> , <i>Gould</i>	...	...	5	...	5
9.	— <i>parvula</i> , <i>Gould</i>	...	10	29	...	39
10.	<i>Camarhynchus variegatus</i> , sp. n....	...	3	13	...	16
11.	— <i>habeli</i> , sp. n.	...	3	4	...	7
12.	— <i>psittaculus</i> , <i>Gould</i>	1	...	...	...	1
13.	— <i>prothemelas</i> , sp. n.	3	...	...	...	3
14.	<i>Cactornis scandens</i> , <i>Gould</i>	33	...	...	...	33
15.	— <i>assimilis</i> , <i>Gould</i>	...	3	...	...	3
16.	— <i>abingdoni</i> , sp. n.	...	...	2	...	2
17.	— <i>pallida</i> , sp. n.	2	...	...	...	2
18.	<i>Pyrocephalus nanus</i> , <i>Gould</i>	24	3	...	1	28
19.	<i>Myiarchus magnirostris</i> , <i>Gould</i> ...	16	1	1	1	19
20.	<i>Craxirex galapagoensis</i> , <i>Gould</i> ...	6	...	2	...	8
21.	<i>Otus galapagoensis</i> , <i>Gould</i>	6	...	...	...	6
22.	<i>Strix punctatissima</i> , <i>Gould</i>	1	...	...	1	2
23.	<i>Zenaida galapagoensis</i> , <i>Gould</i>	8	1	...	...	9
24.	<i>Porzana spilota</i> , <i>Gould</i>	11	...	...	...	11
25.	<i>Ægialitis semipalmata</i> , <i>Bp.</i>	3	...	...	1	4
26.	<i>Hæmatopus palliatus</i> , <i>Temm.</i>	3	...	...	...	3
27.	<i>Streptopelia interpres</i> , <i>Linn.</i>	5	1	...	...	6
28.	<i>Himantopus nigricollis</i> , <i>Vicill.</i> ...	2	...	...	...	2
29.	<i>Tringa minutilla</i> , <i>Vicill.</i>	2	...	...	...	2
30.	<i>Calidris arenaria</i> (<i>Linn.</i>)	...	1	...	...	1
31.	<i>Totanus brevipes</i> , <i>Vicill.</i>	1	...	1	...	2
32.	<i>Numenius hudsonicus</i> (<i>Lath.</i>).....	2	...	...	...	2
33.	<i>Larus fuliginosus</i> , <i>Gould</i>	2	...	1	...	3
34.	<i>Ardea herodias</i> , <i>Linn.</i>	5	...	...	...	5
35.	<i>Nycticorax pauper</i> , sp. n.	2	...	...	...	2
36.	<i>Butorides javanicus</i>	2	...	...	...	2
37.	<i>Dafila bahamensis</i> (<i>Linn.</i>)	3	...	...	...	3
		267	94	84	15	460

Fig. 1.

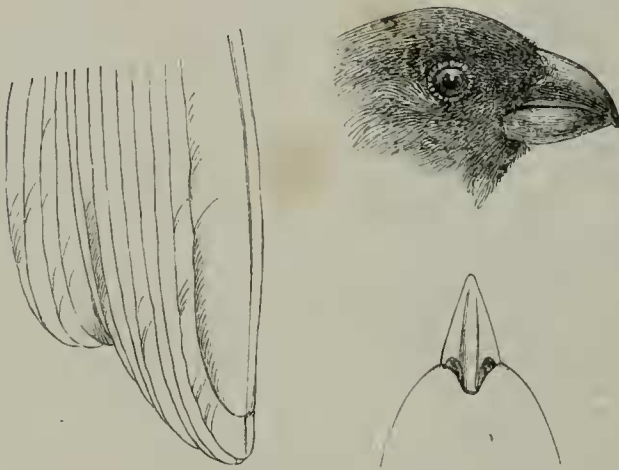
*Certhidea fusca.*1. *CERTHIDEA FUSCA*, sp. nov.

Supra fusca, subtus grisescenti-albida: subalaribus et remigum marginibus internis albis: rostro et pedibus nigris: long. tota 3·7, alæ 2·0, caudæ 1·5, rostri a rictu 0·5, tarsi 0·8 poll. Angl.

Hab. Abingdon and Bindloes Islands, Galapagos archipelago.

Obs. Similis *C. olivaceæ*, sed rostro graciliore, colore, sicut pedum, nigro et veste magis fusca distinguenda.

Fig. 2.

*Camarhynchus variegatus.*2. *CAMARHYNCHUS VARIEGATUS*, sp. nov.

Supra sordide olivacea fusco variegata, alis caudaque nigricantibus, remigibus extus anguste fusco marginatis: capite toto undique et corpore subtus ad medium pectus nigris: ventre sordide ochraceo in summa parte nigro variegato: rostro et

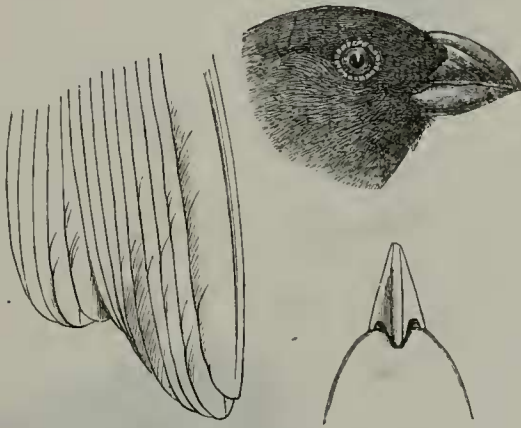
pedibus nigris : long. tota 5·5, alæ 3·3, caudæ 2·1, rostri a rictu 0·55, tarsi 1·1.

♀. *Supra fusca, subtus sordide ochracea, a mento usque ad ventrem nigricante frequenter variegata* : rostro pallide corylino, *pedibus nigris*.

Hab. Abingdon and Bindloes Islands.

Obs. Major quam *C. psittaculus* et capite nigro insignis, sed rostro, quoad formam, fere simili. Remiges secundus tertius et quartus fere æquales, et longissimi.

Fig. 3.



Camarhynchus habeli.

3. CAMARHYNCHUS HABELI, sp. nov.

Supra olivaceo-grisea : alis caudaque fuscis griseo marginatis : capite undique cum pectore toto nigris ; ventre lactescenti-albo : subalaribus et remigum marginibus internis albis : rostro valde compresso, culmine utrinque sulcato ; colore sicut pedum nigro : long. tota 5·6, alæ 2·8, caudæ 1·8, rostri a rictu 0·5, tarsi 0·9.

♀. *Grisea, subtus albida, capite nigro omnino carens.*

Hab. Abingdon and Bindloes Islands.

Obs. Præcedenti affinis, sed minor, et rostro magis compresso et maculis abdominis nullis.

4. CAMARHYNCHUS PROSTHEMELAS, sp. nov.

Supra niger : dorso olivaceo tincto : alis extus et cauda fuscis ; colore pallidiore limbatis : subtus niger, ventre toto pallide olivaceo : rostro rubello, *pedibus fuscis*.

♀. *Supra olivaceo-fusca, alis caudaque saturate fuscis, illarum marginibus dilute fuscis* : subtus ochraceo-albida : long. tota 3·7, alæ 2·4, caudæ 1·5, rostri a rictu 0·4, tarsi 0·8.

Hab. Indefatigable Island.

Obs. Species parva, cujus feminam solam Habelus asportavit ;

marem autem in Museo Britannico, ex itinere Darwiniano receptum, sed nunquam descriptum invenimus. Statura valde minore et rostro brevi et minus incurvo a præcedentibus distinguenda.

Fig. 4.

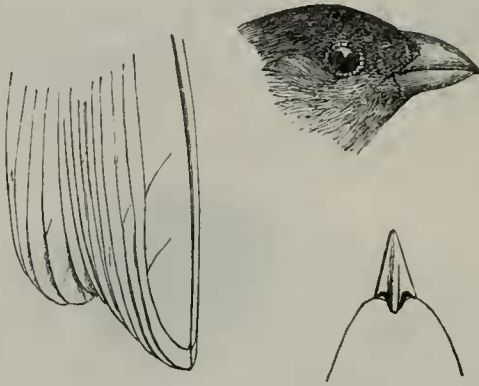
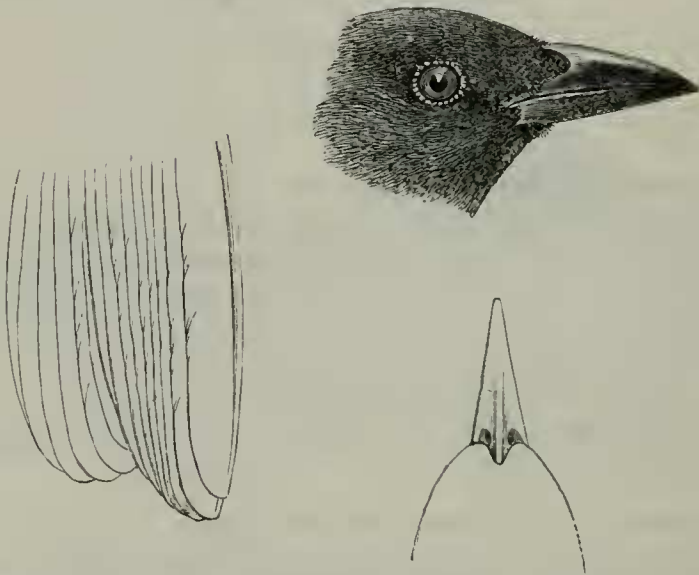
*Camarkynchus prothemelus.*

Fig. 5.

*Cactornis abingdoni.*

5. *CACTORNIS ABINGDONI*, sp. nov.

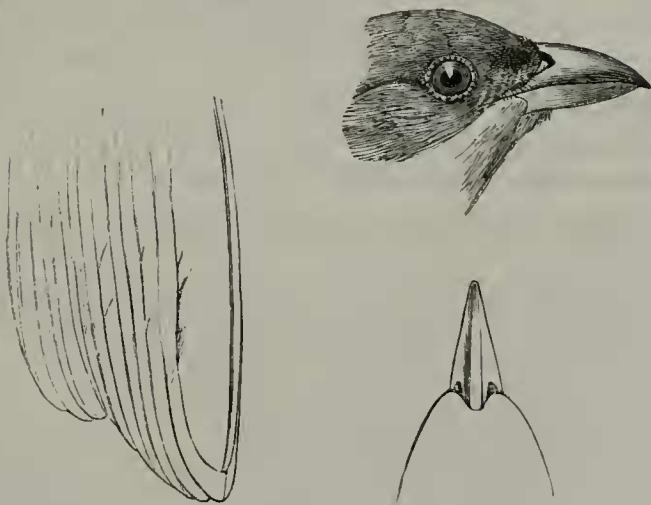
Fuscescenti-niger, alis caudaque nigris fusco anguste limbatis; subtus niger, ventre fuscescentiore et griseo variegato: tectricibus subalaribus nigricantibus: rostro elongato, incurvo, nigro:

pedibus obscure fuscis: long. tota 5·0, alæ 2·8, caudæ 1·6, rostri a rictu 0·8, tarsi 0·9.

Hab. Abingdon Island.

Obs. Proxima *C. scandenti*, sed rostro elongato, magis compresso, nigro differt.

Fig. 6.



Cactornis pallida.

6. *CACTORNIS PALLIDA*, sp. nov.

Supra olivaceo-fusca, alis caudaque obscure fuscis, dorsi colore anguste limbatis: subtus pallide ochracea: tectricibus subalaribus et remigum marginibus internis albis: rostro pallide corneo, pedibus nigris: long. tota 4·7, alæ 2·7, caudæ 1·7, rostri a rictu 0·65, tarsi 0·9.

Fem. mari similis.

Hab. Indefatigable Island.

Obs. Colore ab omnibus distincta, sed forsán avis haud adulta. Attamen mas et femina, specimina sola quæ nobis adsunt, vestitu omnino congruunt.

7. *NYCTICORAX PAUPER*, sp. nov.

Nycticorax violaceus, G. R. Gray, Zool. Voy. Beagle, iii. p. 128.

Similis N. violaceo, sed omnino minor, et præcipue in dorso multum obscurior: dorsi plumis elongatis non, sicut in N. violaceo, griseo marginatis, sed saturate cinereo-nigris, unicoloribus: long. tota 16, alæ 22, caudæ 4, rostri a rictu 3·2, tarsi 3·3.

Hab. Indefatigable Island.

Hujus *Nycticoracis* specimina duo sola, quorum neutrum adultum, habemus, sed ad speciem Americæ meridionalis vulgarem vix referenda esse censemus.

6. Notices of some new or little-known Species of South-American Birds. By P. L. SCLATER, M.A., Ph.D., F.R.S., Secretary to the Society.

I beg leave to offer to the Society some remarks on new or rare American birds that have lately come before me, including the description of the fine new Woodpecker of the genus *Melanerpes*. The species of which I have to speak are four in number, namely:—

1. *THRYOTHORUS RUFIVENTRIS*.

Thryothorus rufiventris, Natt. MS.

Thryothorus galbraithi, Pelzeln, Orn. Bras. p. 47.

Murino-brunneus, uropygio rufescente lavato: alis extus et cauda nigro distincte transfasciatis; superciliis elongatis, albis; regione auriculari alba nigro striato: subtus gutture albo, abdomine rufescente, medialiter paulo dilutior: long. tota 5·0, alæ 2·6, caudæ 1·7, rostri a rictu ·85 poll. Angl.

Hab. Brasil. prov. Goiaz et Matto-Grosso (*Natt.*).

Similis *T. longirostri*, sed rostro brevior, rectior, et colore corporis supra minus rufescente distinguendus.

Herr von Pelzeln has referred this Wren, of which I have a single Nattererian specimen, received in exchange from the Imperial Cabinet, to *Thryothorus galbraithi* of Lawrence. But the latter bird, of which I possess several Panama examples, is in my opinion nothing more than a slight local form of *Thryothorus leucotis*, Lafr. (*T. albipectus* of my American Catalogue), a wide-ranging Guianan and Amazonian species. I have examined skins of it from Cayenne, the Island of Marajo, near Pará (*Wallace*), the Ucayali, Bogotá, and S. Martha, New Granada. I cannot distinguish between those from the last-named locality and Fraser's specimens from Western Ecuador and the Panama bird, upon which Mr. Lawrence's name *galbraithi* was founded, and regard the examples from all the localities above mentioned as referable to the same species.

Under these circumstances, I propose to restore to the present bird (which is wholly distinct from *T. leucotis*, and much more nearly allied to *T. longirostris*) the name by which it was designated in Natterer's MS.

2. *PHILYDOR CONSOBRINUS*, sp. nov.

Supra brunneus, pileo toto cum fronte et cauda tota castaneo-rufis, pileo paulo obscuriore: alis nigricantibus, extus rufo, dorso fere concolori, marginatis, intus, præcipue ad basin, cum subalaribus pallide castaneis: subtus magis dilute brunneus, lateraliter obscurior, in pectore et gutture medio dilutior: rostro nigricante, mandibula versus apicem coryliua: pedibus fuscis: long. tota, 7·0, alæ 3·4, caudæ rectr. ext. 2·3, med. 3·1, tarsi 1·85, rostri a rictu 1·0.

Hab. in Nova Granada int.